This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

3 9015 00356 460 9
University of Michigan - BUHR

Digitized by Google

PROPERTY OF
University of Michigan Libraries
1817
ARTES SCIENTIA VERITAS

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

702

The Hub

With the month of March the carriage trade loses some of its most valued members. Among those whose years of earnest counsel and faithful service in the interest of the trade will cause them to be mourned and missed by all who knew them, are John Hassett, president of the C. B. N. A., and Henry Timken, one of the association's earliest presiding officers.

Oldest Carriage Journal in the World

1858 1909

Vol. LI. No. 1 APRIL, 1909

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

DECALCOMANIE

TRANSFERS FOR ALL PURPOSES

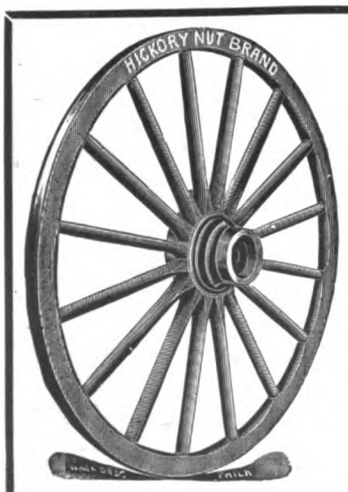
Scrolls, Figures, Flowers, Letters, Animals, Stripings, Numerals, Corners, etc. ¶ Special Name Plates of all descriptions. Buggy Ornaments in sets.

Beautiful Scroll Effects for ceiling work in Limousine bodies; also a large and attractive line of **Plaid Designs** for panels in automobiles. Every live maufacturer should look up this proposition. Nothing is more effective in body embellishment. **Cane Work** Cane Work Transfers are also a big specialty with us. Name your wants and let us talk with you. New catalogue will soon be ready and will be sent with cash orders of $1.00 or more. No paint shop is complete without our catalogue. -:- -:- -:-

Palm, Fechteler & Company

67 Fifth Avenue, New York

Chicago **St. Louis** **Montreal** **Toronto**



CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

66 489A A 30

ESTABLISHED IN 1791

Wm. Harland & Son

Beg to announce that they have removed their United States Headquarters to Genesee Street and Erie Canal, Buffalo, N. Y.

Wm. Harland & Son

IMPORTERS OF

Harland's English Varnishes

FOR

Coach and Automobile Builders, Railway and Street Car Finishing

AND MANUFACTURERS OF

High Grade Varnishes for all Purposes

FACTORIES:

MERTON, LONDON, S. W., ENGLAND.

GENESEE STREET and ERIE CANAL, BUFFALO, N. Y.

400 EASTERN AVENUE, TORONTO, ONTARIO.

Western Branch, 40 Dearborn Street, Chicago. C. H. Schooley, Manager.

General Manager United States and Canada, H. Hagger.

Please mention "The Hub" when you write.

Digitized by Google

JOHN W. MASURY & SON

MANUFACTURERS OF

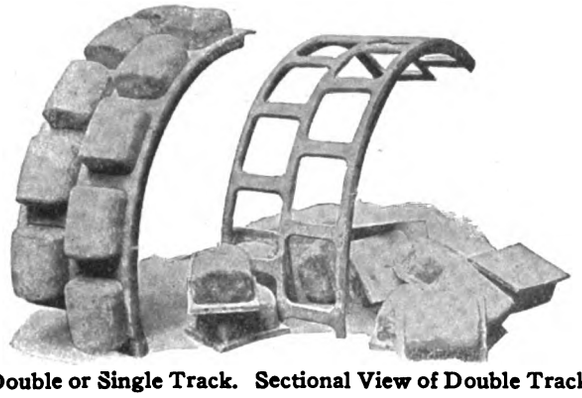
Superfine Coach Colors and Varnishes

NEW YORK——AND——CHICAGO

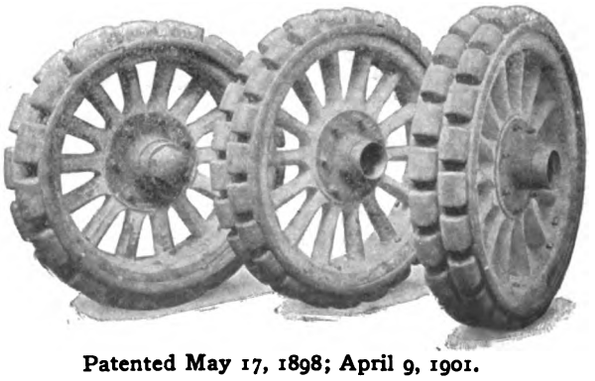
SOLVED!

Is the way the motor car experts express themselves on the subject of tires for commercial motor vehicles after seeing and using the :: :: :: :: :: ::

KELLY-SPRINGFIELD SECTIONAL TIRE



Double or Single Track. Sectional View of Double Track.



Patented May 17, 1898; April 9, 1901.

With a grip on the road that means progress and security from the fault of solid tires—that of crowding the rubber ahead under load, which means disintegration—the motor wagon and truck owner will find in the Kelly-Springfield Sectional Tires the best tire for all heavy cars. Each section is dependent upon itself. If interested, write :: :: :: ::

CONSOLIDATED RUBBER TIRE COMPANY

NEW YORK, N. Y.—and—AKRON, OHIO

Branches:

BOSTON CHICAGO PHILADELPHIA ST. LOUIS DETROIT CINCINNATI SAN FRANCISCO

Please mention "The Hub" when you write.

Digitized by Google

TO CONSUMERS OF BLACKS :

The intensity of blackness of bone black for use in fine coach colors, etc., depends upon the temperature at which the bones are burned. The higher the temperature, the denser and blacker the product.

Unfortunately this very dense and intense black is extremely deficient in covering power, and it is therefore the practice to burn the bones to an intermediate point, so as to obtain the greatest covering power at a sacrifice of the intensity of the color, due to the presence of organic and mineral impurities that tend to develop a brownish cast in the black, also a tendency to thicken after the addition of thinners.

We have succeeded in perfecting a process of grinding under water and subsequent treatment, whereby these impurities are eliminated, thus obtaining a black of the maximum covering power, coupled with great intensity.

The elimination of the impurities also prevents any livering or thickening of the black after thinning.

We believe our black now superior to any other on the market, for the reason that being grinders, we know the ideal of the consumer, and through chemical and mechanical means have been able to produce this ideal.

F. O. PIERCE COMPANY,
New York, N. Y.

Right Varnish Makes
Satisfactory Vehicles

Carriages, buggies and other vehicles that satisfy must not only be well made, they must also be **well varnished.** Your reputation and your profits depend upon the varnish you use. You can make no mistake by using

Standard Varnish Works' Varnishes

They are the standard of excellence because they represent a

Unity of Color, Lustre, Working, Drying and Wearing Properties

Of those not using these varnishes we ask for an opportunity to prove the validity of our claims

STANDARD VARNISH WORKS

CHICAGO NEW YORK LONDON BERLIN BRUSSELS
INTERNATIONAL VARNISH COMPANY, Ltd., Toronto

Please mention "The Hub" when you write.

Digitized by Google

AN EXCELLENT **VARNISH** FOR ITS PURPOSE

IS THE

Lawson No. 1 Gear Varnish

It has an excellent Body
In working quality Similar to HEAVY GEAR
It dries quickly and wears well
Its price is right for a Varnish of its character

THIS VARNISH

Is compounded to answer for ordinary work and REPAIRS and it answers its purpose well.

YOU ARE NOT EXPERIMENTING IF YOU USE IT

TRADE **VALENTINES VARNISH** MARK

VALENTINE & COMPANY

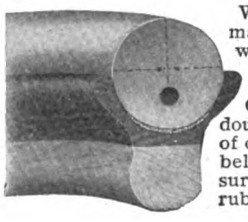
NEW YORK CHICAGO BOSTON TORONTO PARIS AMSTERDAM

The VALENTINE COACH COLORS are Standard because Dependable

Are Your Tires on Right?

They Are if They Are Goodyears

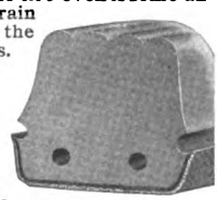
The Goodyear Eccentric Cavity Cushion Tire is *the tire with canvas guides.* These guides insure the correct applying of the tire, with the wire running evenly *below* center, where it should be. Without this guide a tire may be applied "on a twist."



Without this guide a tire may be applied with the wire cavity up or right under the tread. You run no risk with the Goodyear. It has almost double the wearing depth of others owing to its hole below center. The pressure does not crack the rubber around the wire.

The Goodyear Wing Tire keeps out all grit and water which get under the ordinary tire and "sandpaper" or rot them out. All these tires are made of *new* rubber quoted at $1.00 a pound. We *could* use "Guayule" or "Lapori" at 35 cents or "reclaimed" rubber at 10c, but it won't do for Goodyear

The Goodyear Sidewire Tire (conical or corrugated broad tread) is the only solid tire specially adapted to auto-buggies. Spring steel plates prevent the side wires from getting between tire and channel. An internal reinforcing wire holds the tire even if some unusual side strain should break the outside wires.



Send for sample section, Goodyear Solid Rubber Tires are sold by the length or by the reel. Write today.

GOODYEAR

The Goodyear Tire & Rubber Co., Canal Street, Akron, Ohio

Branches and Agencies:—Boston, 261 Dartmouth St.; Cincinnati, 317 E. Fifth St.; Los Angeles, 932 S. Main St.; Philadelphia, Broad and Fairmount Ave.; New York, 64th St. and Broadway; San Francisco, 506 Golden Gate Ave.; Chicago, 80-82 Michigan Ave.; Cleveland, 2005 Euclid Ave.; St. Louis, 3935-3937 Olive St.; Buffalo, 719 Main St.; Detroit, 251 Jefferson Ave.; Pittsburg, 5988 Centre Ave.; Omaha, 2020-22 Farnum St.; Washington, 1026 Connecticut Ave.; Atlanta, 90 N. Pryor St.; Louisville, 1049-51 Third St.; New Orleans, 706-16 Barrone St.; Memphis, 181-5 Madison St.; Dallas, 111 N. Akard St.; Denver, 28 W. Colfax Ave.; Kansas City, 16th and McGee Sts.

Studebaker

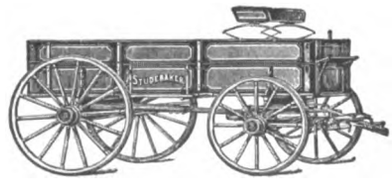
Every Studebaker Wagon Speaks Well for the Dealer Who Sold it

The whole history of merchandising is eloquent with proof that it pays to handle goods of "known" intrinsic value. The good repute of the merchandise handled reflects upon the seller and creates confidence in his business methods and the confidence of the public is the greatest asset that any merchant can have.

The dealer who handles ***Studebaker*** vehicles not only has a line of vehicles that are easy to sell but is dealing in merchandise that will strengthen his standing in the community.

Satisfaction Always Creates Friendliness

Studebaker Bros. Mfg. Co.
South Bend, Indiana



Digitized by Google

Taxicab Hardware

All kinds of Body Hardware especially for Taxicabs

Special Locks	Handles
Hinges	Megaphones
Top Fasteners	Brass Moldings
Leathers	Goat Skins

Trimmings of all kinds

High grade goods only—complete stock —prompt shipments

The English & Mersick Co.

New Haven, Conn.

82 Years' Experience in Every Can

E.S. 1827 &CO. **Edward Smith & Co.**

CARRIAGE VARNISHES

Everything from the Bare Wood to the Finishing Coat.

CHICAGO **NEW YORK**

HOTEL EARLINGTON

55 WEST 27TH STREET
Near Broadway, NEW YORK

This well known, absolutely fireproof hotel, after being entirely renovated, redecorated and fitted up complete with new plumbing has now reopened.

Rates from $1.00 and Up
With Bath, $5.00 aud Up

Special rates by the season or year for permanent guests. A special feature will be the cuisine, both in the dining room and in the new cafe for ladies and gentlemen. A la Carte and Table d'Hote.

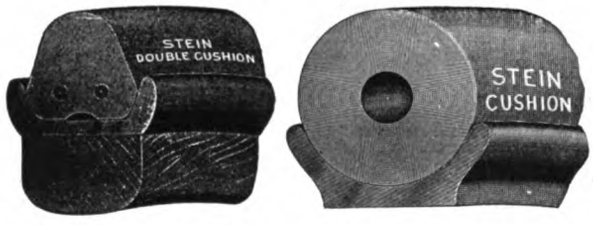
Hotel under the management of

GUERNSEY E. WEBB
Formerly of the Ansonia.

STEIN DOUBLE CUSHION TIRE

EXPERIENCE

is the only true basis on which to figure if you wish to arrive at a fact.



Our story is best illustrated in our product. Be your own judge in deciding the question of tire supremacy.

Pure rubber must naturally be an important factor in a good tire. Rubber quality is only one of the many features that has won recognition for the

STEIN DOUBLE CUSHION TIRES

Be fair with yourself and your patrons. Apply the Stein Double Cushion Tire to your work and win favor with the driving public.

DO IT NOW.

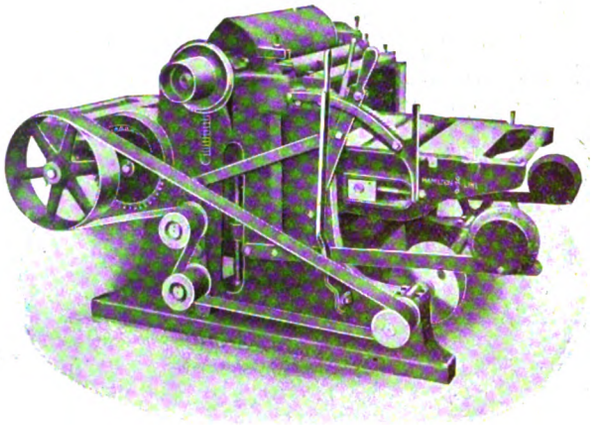
STEIN DOUBLE CUSHION TIRE CO.
AKRON, OHIO

Digitized by Google

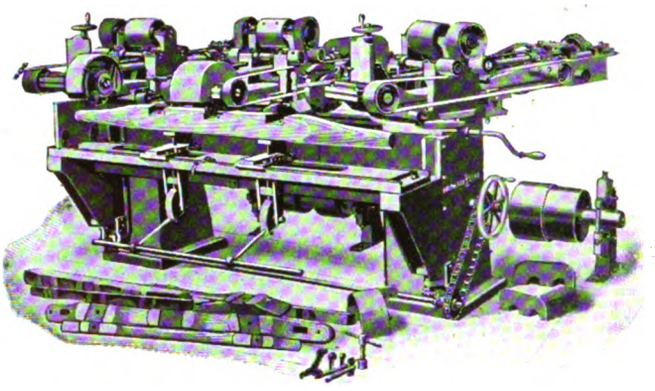
HAMILTON-OHIO LINE WOOD WORKING TOOLS

For Automobile Body and Wheel Work.

Carriage, Wagon, Hub, Spoke, Rim and Wheel Factories



HAMILTON HEAVY SINGLE ENDLESS BED PLANER No. 62.



Hamilton Automatic Triple Axle Gaining Machine No. 162.

Disk Sanders, Belt Sanders, Spoke Sanders, Wheel Sanders, Gear Shapers, Scroll Eyeing Machines, Gear Rounders, Spring-Bar Boring Machines, Seat-Back Benders, Rim Planers, Rim Rounders, Rim Borers, Rim Cut-Off Machines, Wheel Boring & Screw Driving Machines, Spoke Lathes, Spoke Cut-Off Saws, Spoke Tenoning and Mitering Machines, Spoke Throaters, Spoke Facers, Wheel Facers, Wheel Tenoners, Hub Lathes, Hub Mortisers, Hub Borers, Wheel Boxers, Wheel Presses, Tire Truers, Tire Bolters, Spoke Cut-off Machines, Band Saws, Rip and Cross-cut Saws, Planers, Matchers, Moulders, Shapers, Boring Machines, Universal Wood Workers, etc., etc., etc.

THE BENTEL & MARGEDANT CO., Hamilton, Ohio, U. S. A.

C. A. WILLEY COMPANY

Color Grinders

AND MANUFACTURERS OF

SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.

WILLEY'S SUPERFINE SPECIALTIES C COACH R COLORS TRADE MARK

92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.

Digitized by Google

The Hub

Copyright, 1909, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. LI. NEW YORK, APRIL, 1909. No. 1.

THE TRADE NEWS PUBLISHING CO. OF N. Y.
Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*
24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

REPRESENTATIVES:
J. Henry Klune. J. G. Tanner.

Other Publications of Trade News Publishing Co.:
HARNESS (monthly) .....per year, $1.00
AMERICAN HARNESS AND SADDLERY DIRECTORY (annual) .....per copy, $4.00

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

More Membership.

The coming annual convention of the C. B. N. A. will probably present a larger and more enthusiastic membership than any since its origin nearly forty years ago. The committee on membership, appointed a year or two ago, representing the younger blood of the association, has been hard at work with a view not only of increasing the membership numerically, but of accomplishing a more valuable result, viz., arousing a wider and deeper interest in the association.

At first glance this might appear strange—an ill-chosen time to broaden and deepen the hold of this association, when the automobile is making such inroads and when a new association is on its feet with pretty nearly the same name to look after the more prosaic features of the industry, viz., pure business. But if we look more closely we will recognize that now is just the time to look for and expect an increase in membership. The new association is needed. There are business matters to be attended to which only an association with specific purpose can attend to. But there is a call for association beyond the confines of mere business. This highly praiseworthy effort of extending membership ought to succeed. The past few years have brought into the industry a great many builders who have not as yet caught the spirit of the older membership.

It was the generally recognized need of a greater social intercourse and a more harmonious mutual understanding that made the C. B. N. A. possible. While these conditions do not exist to-day as they did at its origin, other conditions have arisen which are even more imperative in their demands. Organization and association have become a necessity in our complex industrial and commercial development. Business is no longer a firm or corporation matter. One business represents only a unit of a vast interest. No concern, however powerful, can conduct its affairs as though there were no other concerns in the same line. Jealousies arose prior to the C. B. N. A. because of the then comparatively limited field for trade cultivation. Railroad systems had not developed the vast interior. Trade was largely local, and builders found themselves tramping on each other's toes. The business of shipping vehicles by carload and trainload to distant points was unknown. Individual jobs were the rule, and supposed originality of design was the feature.

But now all is changed. The membership has not grown in proportion. In a carriage builders' association the greater portion of this membership is from the outside. In the earlier years the accessory interests cut very little ice. They invited themselves, as it were. They brought their material to be looked at. They were then invited to sit down and eat, and so they became a part and parcel of the association. The spirit which holds the association together is seen in the convention hall and in the exhibit hall. At the opening of each day's session there is perhaps a bakers' dozen in their chairs in the convention which, as time of adjournment approaches, may reach two or three score; while in the exhibition hall are found carriage builders elbowing around among the exhibits, deeply interested in material they use in their factories.

Heavier Delivery Wagons.

When delivery wagon building enterprises bloomed out rather suddenly a few years ago, the future of this branch of the industry was not anticipated. The first stimulus came from the expanding requirements of department stores; the second, from a considerable class of lesser stores, which were obliged to follow suit. The earlier construction was designed for small and light parcels, and improvement followed improvement, and cost was considerably reduced until a light delivery wagon came to be regarded as a decided advantage to a large mass of ordinary trades people. Of late these vehicles have grown in size and capacity, and are being used for the quick transportation of heavier merchandise, with modifications in construction that have not involved material departures from the original type, except in weight of parts. Numerous manufacturing concerns and large business houses are finding heavy delivery wagons of

Digitized by Google

service in place of vehicles heretofore largely used. Two or three western builders have been giving special attention to the cultivation of this demand and have made such construction a valuable features to an already extensive business. Conditions and city traffic requirements are favorable to the extended employment of delivery wagons of more massive construction.

Reorganizations.

One encouraging feature of the hour is the number of reorganizations that are being effected in the vehicle industry. These organizations represent either the death of previous concerns or the combination of small concerns which could not stand alone. In most cases the amount of capital inevsted is small, ranging from two thousand to twenty thousand dollars. Most of the new concerns so starting out are made up of men who sought to stand alone, but who lack the essentials of capital, possibly of experience, as well as of familiarity with the trade. Since January first there has been quite a number of these reorganizations in the smaller cities and towns, notably throughout the west. The wiser ones are equipping their reorganized plants more with reference to repair work than building. The increase in repair work since the incoming of the automobile has made it possible for hundreds of enterprising mechanics to make a very successful start, and the reorganizations of the past few months show that they are keen to observe the direction in which their best interests lie.

Make It Strong.

The recent meetings of the executive committee of the Carriage Manufacturers' Association of America have resulted in a measurable strengthening of the association and an arousing of interest among wholesale manufacturers of carriages. The association has already brought about a better understanding in various trade matters with dealers. It constitutes the connecting link between builder and retailer. It is lessening friction and is establishing a basis of mutual dealings which cannot help but straighten out a network of tangles that have lessened the profits of manufacturers and increased the annoyance of dealers.

Now that the country is on the eve of a general uplifting, it is appropriate that builders should co-operate to strengthen the arms of this association for the future and ultimate good of the entire industry in all its ramifications.

Centering Scientific Attention on Timber.

The multitudinous efforts now being inaugurated to conserve and increase the timber supply are already beginning to bear fruits, not in an increase in timber but in intelligent co-operative measures based upon a system. The nature and varying capacities for wood for its manifold utilities are now the subject of close study. It sounds strange in this age of almost universal scientific investigations that the nature of wood is so little understood from a scientific standpoint. Practically, of course, it is understood, but this understanding leads to more or less uneconomic use, which it is the purpose of expert investigation to remove or minimize.

There are three or four institutions outside of government work where experiments are being methodically conducted, among them the University of California, where commendable progress is being made along lines that will lead to the more economic and more specialized use of timber. That some woods have a higher bending strength than others is a matter of common knowledge. Some have greater crushing capacity. Some woods have been proven to have higher bending strength and more crushing strength than oak. It is the intention of the investigators to classify eventually all the timbers of the world, just as minerals are classified, so that the information will be readily available to all who may need it. These scattered investigations will gradually bring together a vast fund of information, out of which can be sifted practical conclusions which will enlighten all concerned and enable the carriage industry to know where it stands so far as available vehicle timber is concerned.

Phaetons.

Occasionally enterprising carriage builders take what in stock broking circles is sometimes called a "flyer,"—pushing onto the market a pleasure vehicle of somewhat new design, with a view of making a little extra business by presenting what might be regarded as the "latest." Sometimes these "flyers" take and sometimes they do not. The stimulus comes from that ever-present desire among many users of vehicles to possess something new, novel or different from the rest of this social world. This spring we are promised something of this sort in a lady's phaeton. This form or type of vehicle appeals to the draftsman, for it affords more inviting opportunity for minor modifications that attract the eye of patrons. The changes introduced on two or three types just now ready for the market are more of a technical or constructive character than practical, and yet the tout ensemble, as the French term it, is decidedly apparent in an indefinable attractiveness to feminine eyes.

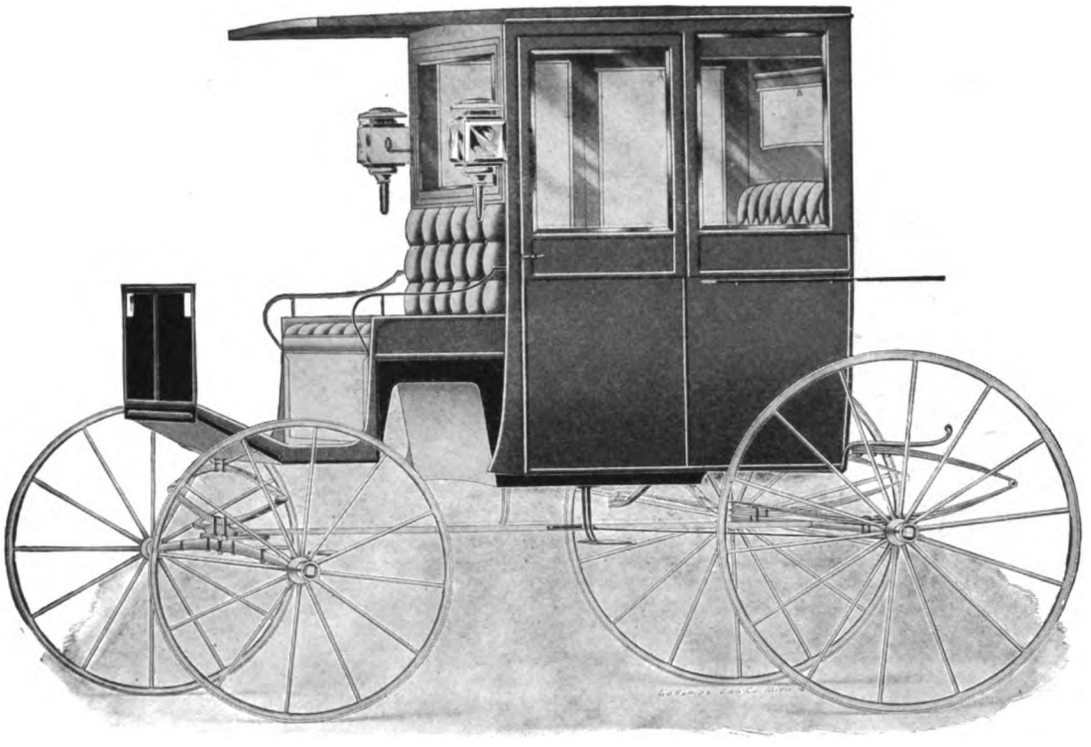
One thing that will help the disposition of these vehicles is the fashion decree from the world's fashion center, that carriage riding is to be more in evidence; in other words, the afternoon drive is prescribed as a necessary part of social ethics. This decree, as it were, might be regarded, as an outcome of automobiling, of the outdoor exercise fad, of the better health idea that is being so vigorously preached and urged in so many quarters. The carriage builders who are placing phaetons on the market this season will have the uninvited co-operation of those who decree fashion's quibbles.

The dealers in vehicles have been almost as slow in siezing whatever opportunity there was to extend their business by selling automobiles as the manufacturers of carriages were slow in taking up the manufacture of this modern means of rapid locomotion. Even now a great many dealers regard the automobile as an obstacle to their business, rather than a possible aid, and they are treating it with a spirit of indifference. At the same time, during the past six months a large number of jobbers and dealers have sought or have accepted the agency for automobiles, and their sales have been a surprise to them. There is nothing whatever to stand in the way of enterprising dealers from increasing their business and profits, and they will find that the automobile, properly handled, will become a valuable adjunct to their trade.

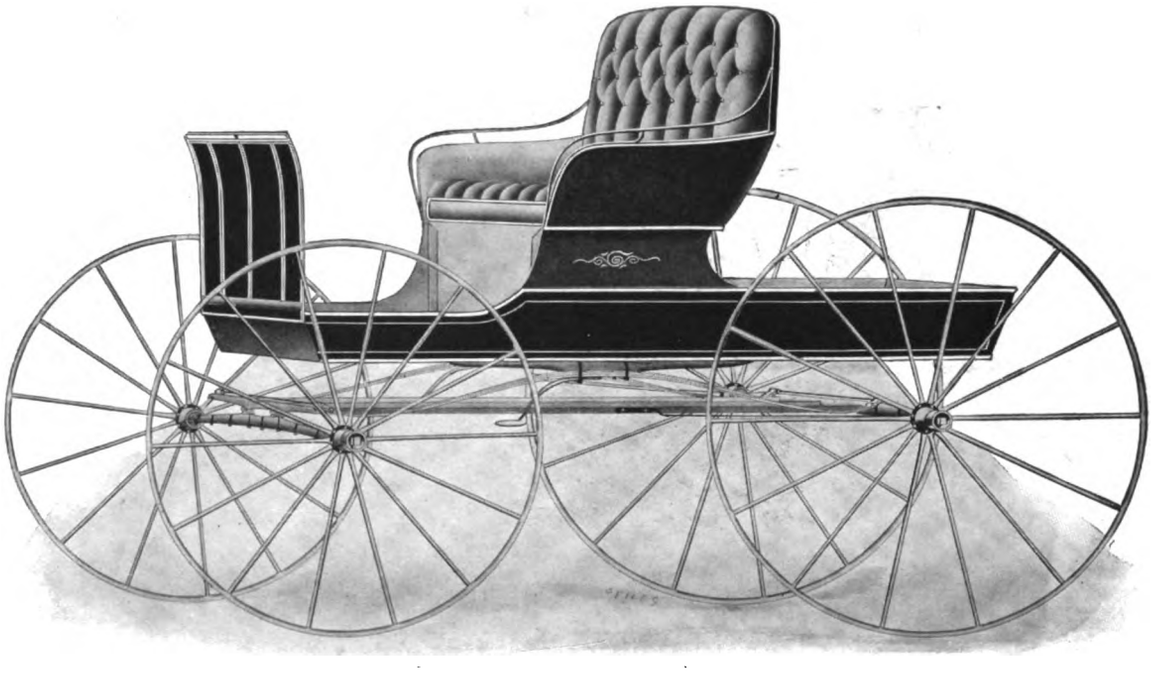
The frequent references of late to the increasing probability that the carriage builders will monopolize the building of light self-propelled vehicles, especially buggies, are warranted by many recent developments. Preparations are now in a forward state by several builders for plants and extensions of plants, for the turning out of auto-buggies. Prominent dealers are lending their influence and encouragement. Sales for the past three months emphasize the growing opportunity.

Digitized by Google

Illustrated Carriage Section, April, 1909

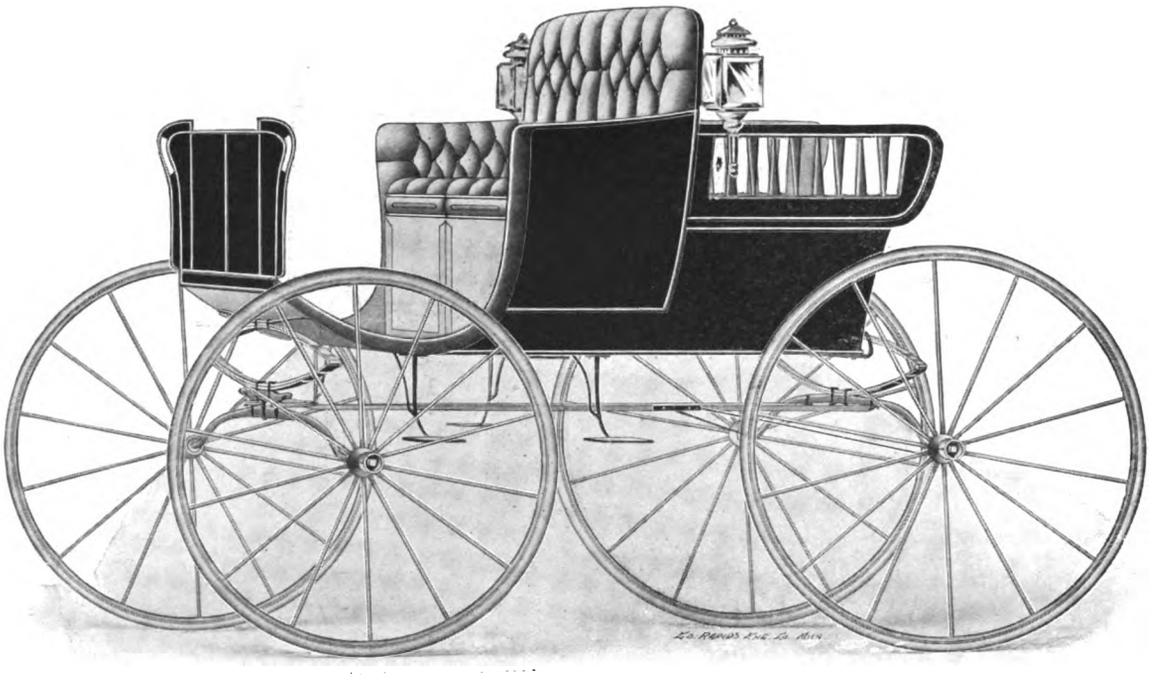


STATION WAGON.
Built by H. H. Babcock Co., Watertown, N. Y.

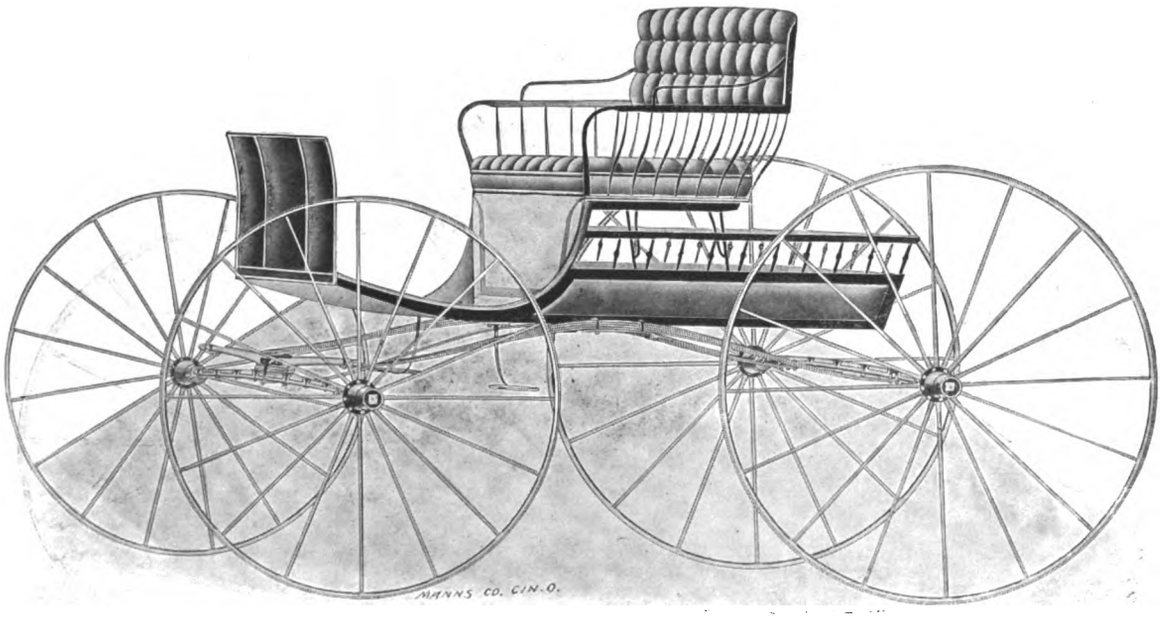


HANDY CONCORD WAGON.
Built by Fuller Buggy Co., Jackson, Mich.

Digitized by Google

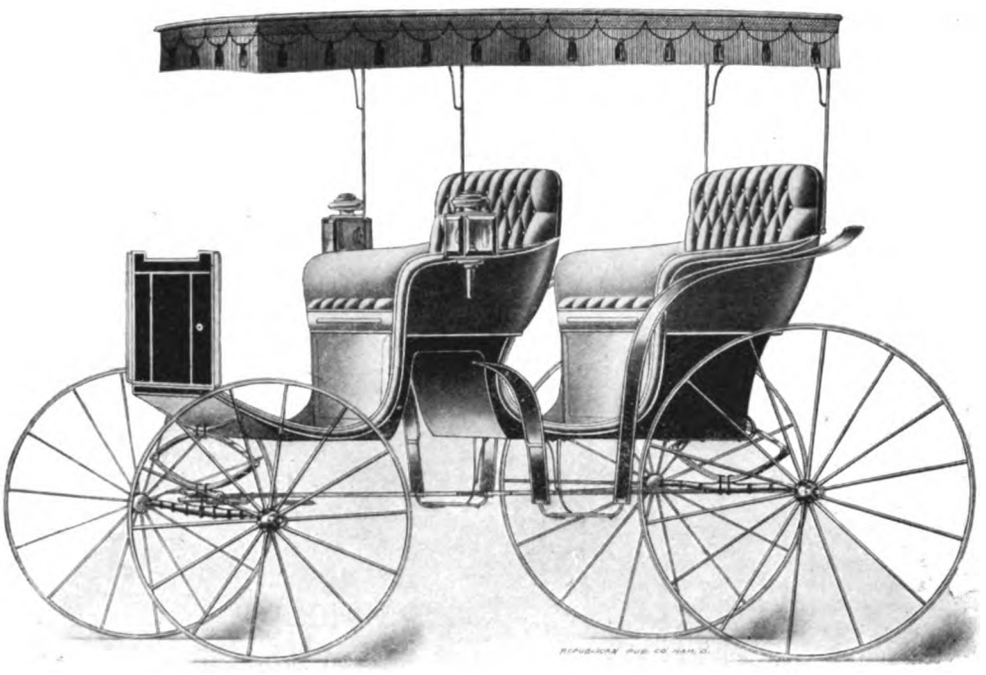


TRAP WITH BIKE GEAR.
Built by Elkhart Carriage and Harness Mfg. Co., Elkhart, Ind.

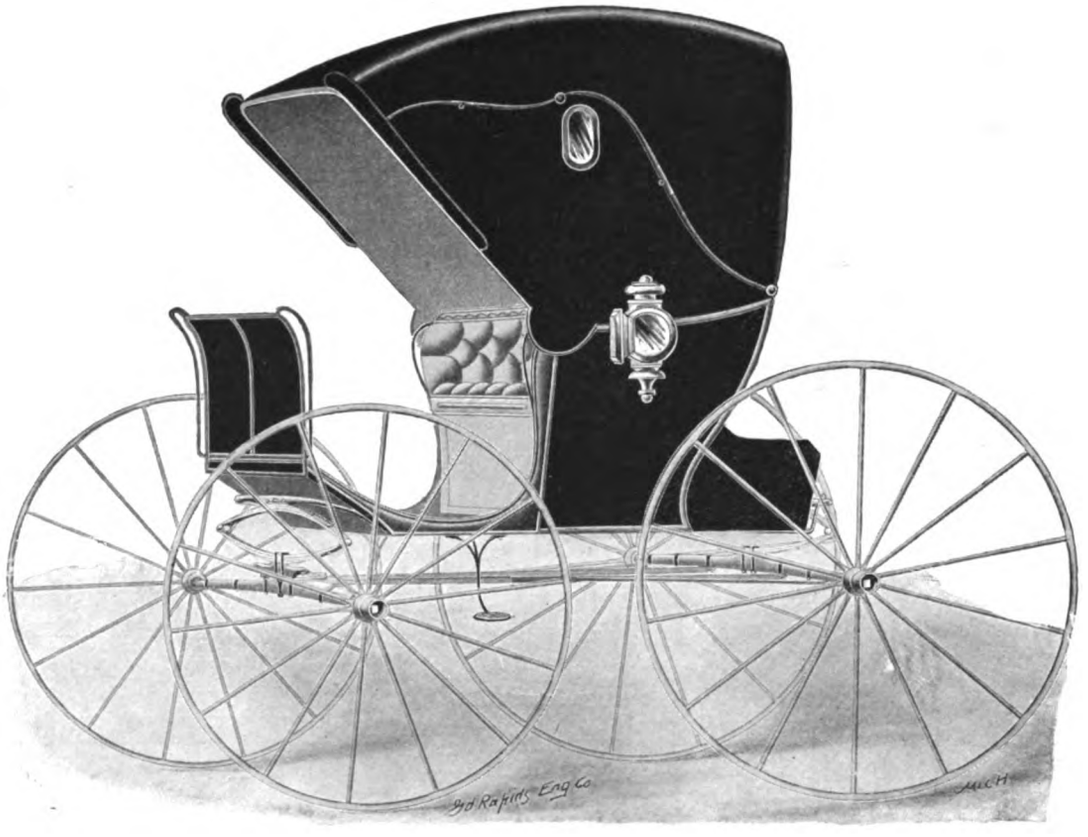


OPEN SPINDLE RUNABOUT.
Built by Delker Bros. Buggy Co., Henderson, Ky.

Digitized by Google

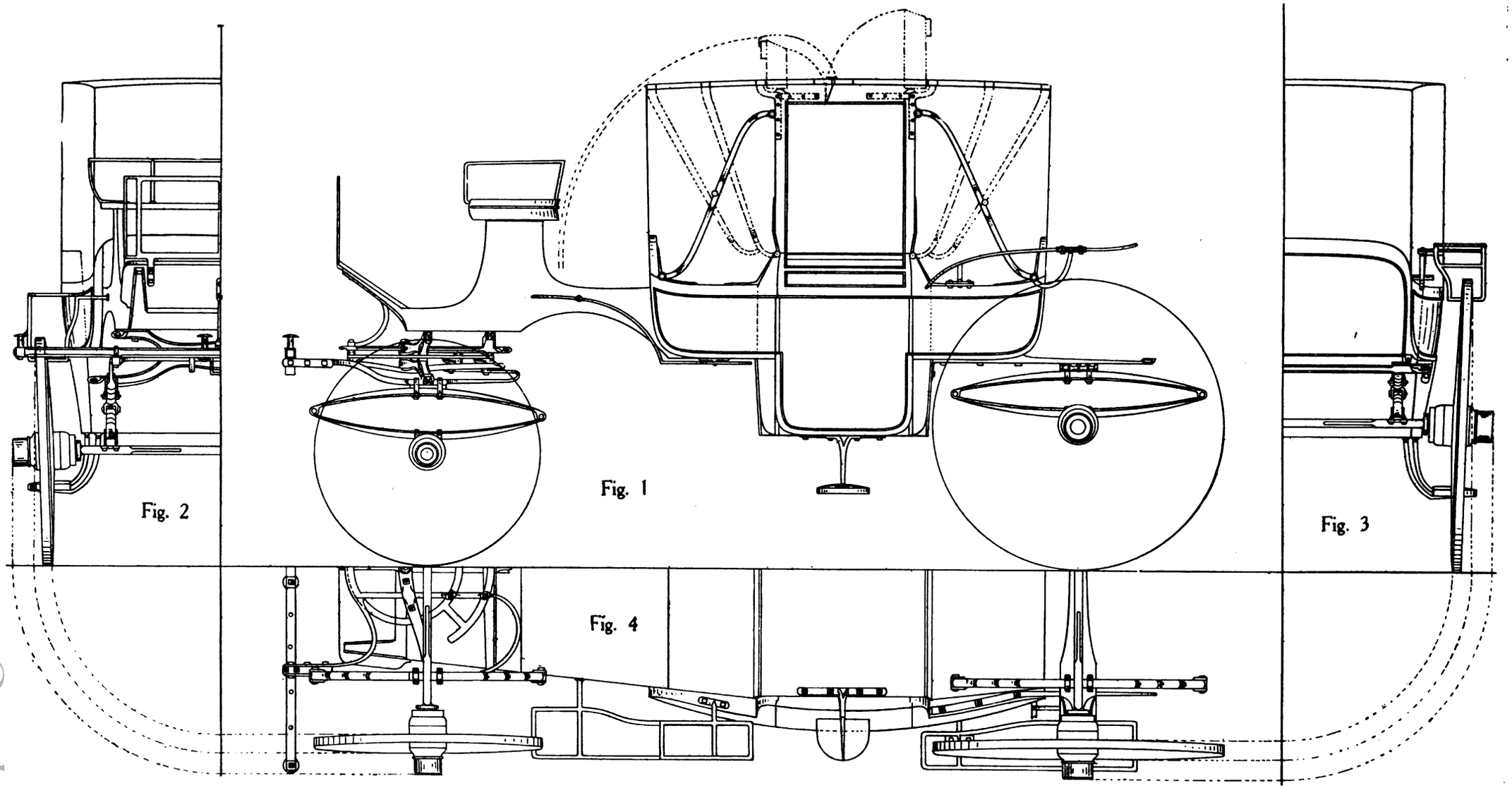


CUTUNDER SURREY WITH CANOPY TOP.
Built by Henderson-Hull Co., Savannah, Ga.



COLUMBIA STANHOPE.
Built by Cortland Wagon Co., Cortland, N. Y.

Digitized by Google



WORKING DRAFT OF DROP LANDAU.

Described on opposite page.

Digitized by Google

Wood-working and Smithing

WORKING DRAFT OF A DROP OR SQUARE LANDAU.

Drawing on opposite page.

The drop landau, as it is called by some builders, is but a carriage of general call. The canoe design holding the sway is the demand of those using a closed and open carriage combined in one. The drop landau is also called a square landau. This is mentioned here to prevent a confusion of names in speaking of one and the same carriage. The great advantage in a carriage of this design is that a depth of leg room is obtainable which is impossible in a canoe-shaped body. Though with this great advantage in favor of the drop body, there are localities where it is seldom seen, and therefore for this reason body makers who have passed their experience in these restricted area find a difficulty in building a body of its design when they are given one to make.

The drop landau finds its principal patrons amongst the elite of carriage buyers, for there is an exclusiveness and dignified balance in its poise and design that lifts it away from the more common lines on which the canoe body is built.

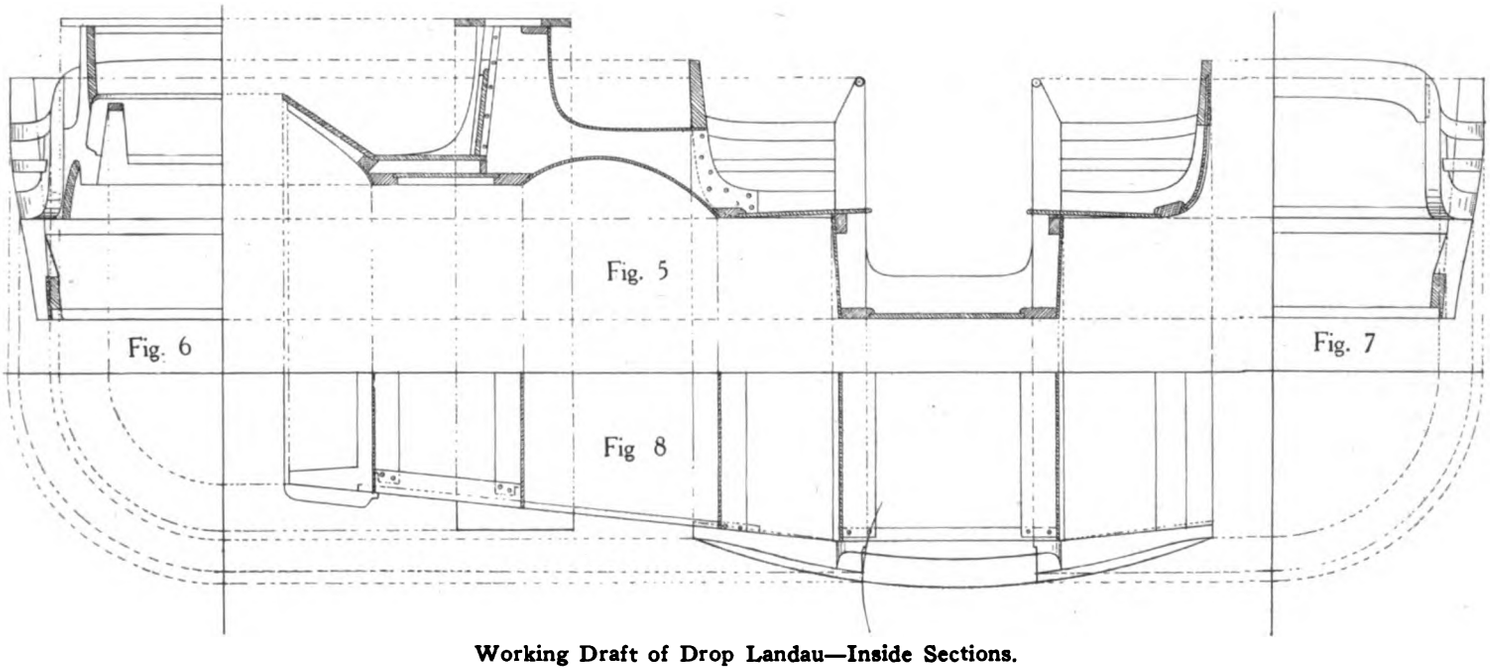
A drop landau is greatly improved where its angularity can be soothed off into short curves, but which do not encroach upon the character of the design in its chief features. In the design of which our working draft is a full practical explanation, it is sought to give force to the value of the wide application of art to the immediate needs of our industry's direct improvement and progress.

Of course the direct trend of manufacture is the making of money, and to concentrate the methods of production, which is one of the chief planks in manufacture, but this is not everything.

For there is a value to which manufacture must bow, and that is invention in whatever form it may assert itself, because it dominates manufacture.

The outline in our draft is a series of short curves, blending into the square design of the body, with a pleasing harmony, which is much better than direct angularity. Because no matter how rakish the lines may be cast, they never stand clear from the gate and box type of design.

The bottomside or base lines of the body are of pronounced curvature at the corners. The elbow line flows finely to a quickened point, and thus harmonizes with the corner pillar line. The hinge and standing pillars are got out 3½ in. and ¾ in. wide, respectively, and are dressed in a rounding champhor on the rocker line from the back of the pillar to the front. The door bottom is rounded at the corners to harmonize, of course finishing the doors and pillars with rounding corners entails more work, because the pillars have to be got out wide enough to allow of their being worked up in the solid; but the enriched finish which the curved corners give to the body make it worth the extra trouble and expense.



Working Draft of Drop Landau—Inside Sections.

The boot is also designed with curves in the front, neck and bottom arches, so that while the body is constructionally a square landau, yet the soothing euphony of the curves, as shown in the elevation, gives a beauty which cannot be reached by straight lines, however they may be placed in the design of a drop landau.

The body in its framing quarters is made in the same way as a brougham. The bottom sdes and corner pillars are got out in one piece, which is much better than framing a corner pillar in, because in a solid bottomside and corner pillar no joints are made and therefore no part can work.

The rocker should be shouldered to the pillars from the inside, and between them in the doorway a ¼ of an inch. This gives a good steadiment.

In framing the bottomsides they will have to be thrown round the amount of the rocker's depth from the square line of the pillars angle outward than their position on the plan, so that when the side sweep is held to the elbow line it will fit the body correctly from point to point. This line is shown in chain line on the plan.

Digitized by Google

The elevation, Fig. 1, gives the design complete, and from which all measurements can be taken, as to sizes of body, height of wheels, length and compass of springs, and the chief points in hanging, in the depth of undergearing, height of futchell or point of draught from the ground, the diameter of double bearing transom wheel, or fifth wheel, and the height of body from ground, also of step and its forged depth.

Fig. 2 shows the half front view, from which all transverse measurements can be taken of body, the bearings of undercarriage, and the shape of the beds; the length of axle over collars and over solid flaps, and the length of boxes; also the length and strength of splinter bar, and the width between futchells, the length of top and bottom beds of undercarriage.

Fig. 3 shows the half back view, from which the widths of the body at its various points can be taken, and the shape of the back panel moulding and framing line taken off. The position of pumphandles and their widths, and sizes as to forging. The spring is fixed to flap forged on the inside, and not directly over the pumphandle, as is very frequently done. The length of axle over collars and over solid flaps and boxes.

Fig. 4 shows the half plan of body, and the position of fixing all the undergearing, together with draft of the front undercarriage, the size and shape of the spring bar and pumphandle and flap upon it. The position of the wings and their points of forging.

The shape and points of connection of the head side joints can be got from the elevation, Fig. 1, but in many landaus side joints are not used at all, the head being held to its position with inside coil springs and secured in the flaps with inside head locks.

Fig. 5 gives the inside elevation of body, from which the lines of the framing is clearly shown.

Fig. 6 shows the half front of body, from which the cross measurements and the points of framing can be taken.

Fig. 7 shows the half back view of body, the lines of the framing; the moulding outline of the back panel is shown in Fig. 3 the cross measurements from the back at elbow points down to the bottom of the turnunder pillar can also be got.

Fig. 8 shows the half plan of body, from which all the lines of framing are taken. The bottomsides should be dressed up on the bottom surface with the horizontal to their angle, as shown on the plan. Or they can be dressed with an ordinary bevel, to horizontal lines drawn in line with the body, and the bevel set to the angle of the bottomside shoulder, and held to the horizontal lines right up to the top of the corner pillar at elbow joint, which will give the correct dressing.

The door shutting pillar should be bevelled on the inside, which is a straight line, to the bevel of the shutting line of the pillar cheek. This is done on the inside, which is better than bevelling the cheek side, which cannot be done correctly, as it is a curved piece of timber. Though this is the general way of bevelling the shut line of the pillar, which keeps its framing lines square, while bevelling the instide straight line throws it round, and both cheeks on the angle, to which the bottomside shoulder should be cut.

The sizes for building are: Length of body on elbow line, 5 ft. 2 in.; length of hind elbow, 21 in.; front of same, 20 in.; width of door, 21 in.; height from seat to head slat, underneath, 42 in.; rise on head, 1 in.; full length of boot from elbow to top of bracket, 4 ft.; depth of side of same, 19 in.; width at top, 9 in.; width of seat, 14 in. by 38 in.; depth of body quarters over all, 11½ in.; depth of rocker pillar, 12 in.; depth of door waist rail, 7 in.; width of body on back, 40 in.; across standing pillars, 50 in.; across top of boot at elbows, 36½ in.; across tip of brackets, 27 in.

Gearing—Height of hind wheels, 46 in.; tyres, 1¼ in.; spokes, 1½ in.; other sizes to Werner standard. Height of front wheels, 36 in.; tires, 1¼ in. India rubber. Spokes, 1½ in. Length of hind springs, 40 in. over all; number of plates, 5; width of same, 1½ in.; open eyes, compass over all, 7½ in.

Length of front springs over all, 37 in.; number of plates, 5; width of same, 1½ in,; open eyes. Compass over all, 8 in.; compass over front carriage beds, 8½ in. Diameter of transome wheel plate, 18 and 28 in. Length of splinter bar, 5 ft. 4 in.; length of collinge axle behind, 46 in.; over collars over solid flaps, 37½ in.; width of same, 1½ in. by 5 in. Strength of axle, 1¼ in.; length of boxes, 8¾ in.

Length of front axle over collars, 46 in.; over solid flaps, 36 in.; width of same, 1½ in. by 5 in. long. Strength of axle, 1¼ in.; length of boxes, 8¾ in.

Height of body from ground on center of door bottom, 21 in.; on front bracket, bottomside, 37 in.

Height of step from ground, 12 in.; width of wheels on the road, 4 ft. 8½ in.

THE HICKORY PROBLEM.

What Will Science Do to Solve This Most Interesting Subject?

The hickory problem is the ugliest one the wood using industry ever faced. It is one that we will have with us for a long time. Hickory is about the laziest tree that grows. Some But whatever measure may be adopted, it is certain that the foresters propose to hasten its growth by partial cultivation. wood using industries will be obliged to find something else that will answer the purpose.

There is another view to take of this question, and that is that there are vast areas on the surface of the earth which are a stranger to the woodman's axe, says the Canadian Implement & Vehicle Trade. When we consider the vastness of these unknown regions covered with timber we should be inclined to doubt the extent of the dangers to which we believe we are subject. Much of the historical shouting over the exhaustion of hickory is premature. It does not stand to reason that in the economy of nature there should be an absolute exhaustion of such an indispensable wood as hickory. This world is 25,000 miles around, and there are vast regions which never heard the snort of the locomotive.

Recent announcements tell of vast stretches of timber in Mexico. Torrid countries furnish peculiar hardwoods. Asia has its limitless expanses of timber concerning which nothing is accurately known. Experts and specialists are now traveling the world over while conservative agencies on this continent are hustling to make the best of what remains.

It will not be long before some escape will be provided. Methods for the treatment of timber have not been exhausted. Science has hardly entered on the threshold of this vast subject. We can make fabrics that look and feel like silk out of cotton. Why may not some future investigator find some way of making "hickory" out of less valuable and more abundant woods? To laugh at the suggestion is no answer. We are living in a wonderful age of progress.

There are scientific problems to solve which will transform existing ways of doing things which will make our present civilization look like moonlight as compared to sunlight.

VEHICLES IN LONDON POPULAR IN PASSENGER TRAFFIC.

Consul-General Robert J. Wynne reports that the remarkable growth in the use of motor vehicles in London is shown by the following figures published in the current number of Motor Traction:

	Cabs		Omnibuses	
Year.	Animal.	Motor.	Animal.	Motor.
1903.....	11,404	1	3,623	13
1904.....	11,057	2	3,551	31
1905.....	10,931	19	3,484	241
1906.....	10,492	96	2,964	783
1907.....	9,818	723	2,557	1,205
1908.....	8,475	2,805	2,155	1,133

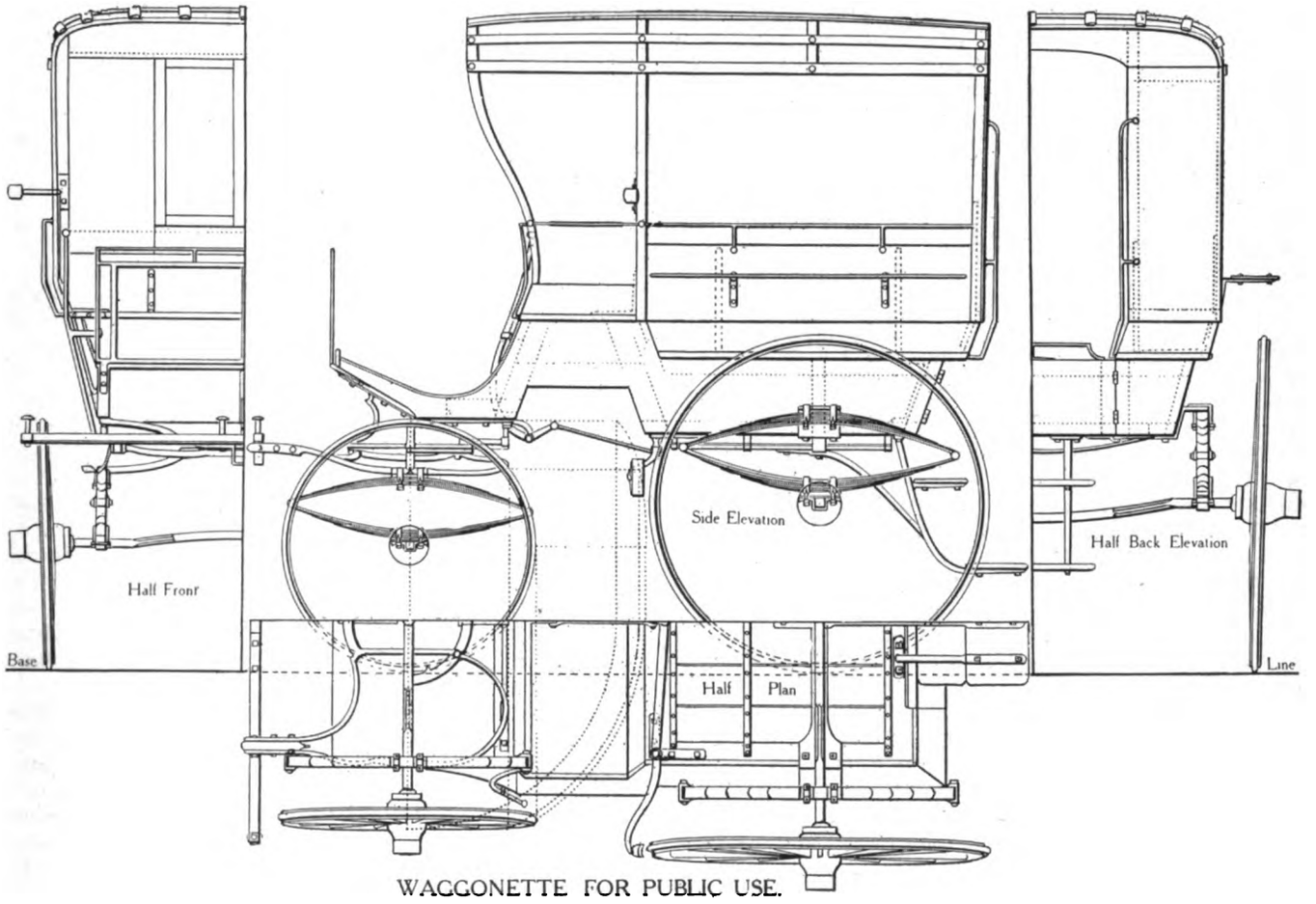
At the beginning of 1907, however, signs were not wanting to

Digitized by Google

show that the rapid diminution of horse cabs was beginning to lessen, for they only showed a decrease of 674, while the increase in motor cabs amounted to 627—in fact the two very nearly balanced each other. Now, at the end of 1908, we find an increase of 2,082 motor cabs, but only a decrease of 1,343 horse cabs, leaving 739 more vehicles to crowd the streets than there were last year.

WAGGONETTE FOR PUBLIC USE.

In recent years the tendency has been to abandon the old curved patterns of street waggonettes, and to adopt a plainer style, with a more roomy body, and resembling in general appearance a private family waggonette. The drawing shown on this page is from the Australasian Coachbuilder, and shows an Adelaide style of two-horse street waggonette, which is good



WAGGONETTE FOR PUBLIC USE.

pattern for the class of work demanded from it. It will seat six persons inside, and three on driver's seat. The body is made with cut-under, and is set low, and with a strong double step at back is easy to get into. For details of construction see the various elevations in the drawing given in the following principal measurements:

Body—Length over all, 7 ft. 9 in.; width over all, 4 ft. 7 in.; width across bottom, 3 ft. 5 in.; depth of panel at back, 11 in.; width of doorway at back, 2 ft.

Seats—Back, over bottom, 3 ft. 8 in. by 1 ft. 2 in.; back, depth of sides, 5½ in.; front, over bottom, 4 ft. 4 in. by 1 ft. 7 in.; front, depth of sides, 5½ in.

Springs—Front, 1⅜ by ¼ in, 4 plates, centres, 2 ft. 10 in.; compass over all, 9 in.; hind, 1¾ in. by ¼ in., 6 plates, centers, 3 ft. 3 in.; compass over all, 11 in.

Wheels—Front, diameter in wood, 2 ft. 10 in.; 12 spokes, 1¼ in., rubber tyres, 1¼ in.; hind, diameter in wood, 3 ft. 10 in.; 14 spokes, 1½ in, rubber tyres, 1½ in.

Axles—Front, 1¼ in., between hubs, 4 ft.; hind, 1⅜ in., between hubs, 4 ft. 8 in.

CLEVELAND INDUSTRIAL EXPOSITION.

Cleveland's Industrial Exposition, which will be held June 7 to 19, at Cleveland, Ohio, promises to be unique in the history of home-product expositions in the diversity of manufactures shown. It is estimated that 125,000 different articles come out of the city's 3,500 shops. The percentage of these displayed will give unusual variety and range to the exhibits, and will add greatly to the spectacular as well as to the educational value of the exposition. Cleveland leads all other American cities in the production of steel ships, heavy machinery, hardware, twist drills and small tools, wire and wire nails, bolts and nuts, vapor stoves, electric carbons, malleable castings, telescopes, gasoline, steam and electric automobiles, and takes high rank in the manufacture of paints and oils, women's clothing, chewing gum and various other products.

In many cases the demonstration of the method of manufacture will be made by running machinery, and the active use of the manufactured articles will be shown.

The exhibits themselves will be full of interest, ranging all the way from the latest types of street cars and ponderous machinery, to the intricate products of expert workmanship; from soaps and washboards to the most recent model of fashion's decree for women.

One building will be devoted to machinery, hardware, transportation, paints, oils, builders' supplies and similar sundries, the other to illumination and finely finished articles, such as furniture, clothing, leather, printed matter, specialties and novelties.

Besides the live exhibits, many booths will be novel and elaborate in their arrangements of displays.

H. Zornow, 115 Hochallee, Hamburg, Germany, writes that he is desirous of securing catalogues and price lists from American manufacturers of road carts, farm and colonial wagons, as well as jinrickshaws and their parts.

Digitized by Google

PANTIING AND UPHOLSTERING

TO TOUCH UP AND VARNISH BUGGIES.

Here is a class of work which outside of the larger towns and cities is commonly regarded as affording entirely unsatisfactory profits. And in a measure—we have no reliable means of knowing just what that measure may be—this conviction is doubtless true.

But the buggy to be touched up and varnished is not altogether undesirable, for as a "filler in" it will furnish at least excellent day wages when idleness might threaten.

The first consideration in handling this class of work is to unhang as few parts as possible consistent with rapid and good results, as in these operations profits are eaten away swiftly. Certain spaces in the shop having access to plenty of light should be reserved, and here the jobs should be located, for it is a great advantage to handle two or three or more of them at the same time, thus in a sense specializing the processes.

Having placed, say, for example, three of the jobs in position, first remove the wheels, marking them with quick drying white paint on the face of the tires, giving them a job number and an axle arm number, after which clear the grease from the axle arms. Then set aside cushion, carpets, side curtains, boots, storm aprons and other accompanying furnishings, attaching a tag with job number, owner's name, date to be completed, class of repairs, etc., noted thereon. Next clean and brush out the top lining, and clean and sponge out the inside surface of the body. Sponge off with clean tepid water the rubber or leather of the top, and if same is to be renewed with a dressing or preservative of some sort, apply such material next. All such applications should, however, be made sparingly. If side curtains, boots and other leather or rubber furnishings are to be likewise treated, do so while you have the material in hand. Then give the outside surface of the body a light surfacing with water and pumice stone flour to reduce the gloss, if any, and to knock down any existing dirt substance. Wash thoroughly, after this rub over.

Examine the running parts for greasy smears, removing such, if found, with a cloth saturated with turpentine, or by rubbing with a felt pad slightly moistened and flecked with pumice stone flour. Then wash running parts, wheels, of course, included. The shafts have been left attached to the gear, and these should be washed, and the leather on them, if worn and dingy, dressed over, or renewed by rubbing with a cloth saturated with kerosene. This latter treatment may also be given to the dash.

Then match up to the color on the body, smearing on a patch of varnish to catch the color shade. Use enough varnish in the match color—and this applies to both body and running parts—to prevent any color reaction in the pigment during the process of drying. When the proper match color has been struck, just go carefully over the surface and touch the spots actually in need of it. Make the touch up smears as small as possible, for it is rare, at best, when the old and the new exactly agree in tone and shade.

Proceed with the running parts likewise, except that when portions of the surface have been festered with grease it were advisable to cut in solidly from axle clip to clip, following this practice out in respect to all surface sections divided into individual spaces by the requirement of manufacture.

To attempt to touch up such portions of the surface amounts, practically, to a sheer waste of time. If necessary, such sections may be striped to match the other parts of the surface.

If the touching up can be done before dinner, the varnishing can be commenced not later than the middle of the afternoon, beginning first by varnishing the interior of the body, upon which a hard drying varnish of good weight should be used. Also finish inside of seat. Then, of course after dusting, flow the seat panels, then the main body panels, using all the varnish—a medium drying finishing varnish—the surface will carry.

Where but a single coat of varnish is to be applied, the medium drying varnish, with its heavier body and quicker drying properties, is to be preferred. Such a varnish will seemingly hold its whole body intact upon the surface, and will therefore give better surface effects, whereas a very elastic varnish, carrying a greater percentage of oil in its composition, will strike deeper and with greater volume into the old surface.

For the running parts use a heavy body gear finishing varnish. Both body and gear varnish should dry over night perfectly free from dust, and in good drying quarters they should do still better than that; be sufficiently hard, in fact, to permit slipping on the wheels, and touching up axle nuts, hub bands, etc.

To varnish a buggy of the class here referred to, it requires, approximately, as follows: Inside of body, ½ pine; outside of body, 2-3 pint; running parts (this to include wheels and shafts), 1½ pints.

The cost of the above material at present quotations for a reliable varnish will amount to	$1 58
Color, dressing and minor items of supplies	75
	$2 33
Then add labor	2 67
	$5 00

A good active workman with three jobs to concentrate his attention upon will do the work upon each in about six hours, or at the rate of 44½ cents per hour, thus affording at least a fair rate of compensation, after deducting shop rent, insurance, interest on investment, wear and tear of tools, etc.

In smaller communities where rents, cost of living, etc., are cheaper, the touch up and varnish job can be, and is, done for less than $5.00—considerably less.

Cheaper class of buggies, and livery buggies of the ordinary sort, may be finished with a hard drying varnish, sold by reputable manufacturers at a decidedly lower price than that upon which the above figures are based. And all these items assist in keeping the cost of doing the work down to a just proportion with the price paid for it.

THOUGHTS UPON PAINTING CLOTH AND CANVAS TOPS.

The wagon painter finds this a practical question and one upon which it is well to keep informed. The enameled drill or so-called oil cloth top should have for a first coat pigments mixed in five parts gold size japan and three parts raw linseed oil. Beat the pigment out thoroughly and thin with turpentine to the proper working consistency. The pigment may be beaten to a stiff mass in the gold size and oil, and then thinned.

For canvas tops, first sponge the top and side curtains with tepid water, and permit the fabric to dry partly. Then coat with a paint containing a strong lead base, using in the mixing one part raw linseed oil to four parts turpentine. Color this first coat strongly in the direction the final color is to be, and in the preparation of the second coat of paint reduce the quantity of oil by one-half, or make the proportions one part raw linseed oil to eight parts turpentine. In both first and second coats use a few drops of pale drying japan, or regulation coach japan, to insure safe drying results.

Another way is to first apply two coats of hot glue water,

Digitized by Google

twenty-four hours apart. Then mix keg white lead in two parts raw linseed oil, and one part turpentine and coach japan, half part each. Mix the second coat of pigment, usually lead, in two parts raw linseed oil, part coach japan and five parts turpentine. Follow this coat in due time with two coats of white color and varnish. Upon the second coat, when dry, rub lightly with water and pumice stone, stripe and letter and finish with a single coat of very pale elastic varnish.

A cheap, quick and durable way to paint canvas tops is to use in a gallon of soft water four ounces of white vitriol. Add whiting of the refined quality to thicken the solution to a paint consistency. With an oval or round bristle brush prime the outside surface of the canvas, which will make the goods fully elastic and so fill the texture that a couple of coats, and sometimes three coats, of paint are saved. Finish the top with elastic coats of pigment.

The process, time honored and supported by the approval of many years of practice, consists of coating the canvas, except the curtains which it is desired to roll up, inside and outside with rye flour paste. When the paste has dried thoroughly cuff off the texture knots and nibs with No. ½ sandpaper. Then apply a first coat of white lead paint mixed in one part raw linseed oil and two parts coach japan, adding enough turpentine to limber up the mixture. Make the next coat of one part raw linseed oil to six parts turpentine, with a dozen drops of coach japan added to each quart of the paint. This coat will flat down perfectly, as it should. Follow with two coats of white color, and varnish. Rub down the last coat with pulverized pumice stone and water, stripe, letter and finish with a durable furnishing varnish.

The curtains, which are to be rolled up and down as desired, should be brought up with oil paint in order to preserve the elasticity of the material.

In case lettering or ornamental striping and decorative effects are to be applied upon unpainted or unsized canvas or cloth, moisten the fabric with water and then with paint having plenty of oil in it. Apply the letters or ornaments. By drawing the cloth firm and taut, and applying a size made of three parts water and one part starch, allowing the size to dry thoroughly before working over it, the letters, etc., may be applied.

Cooked starch and glue water, enough of the latter being added to reduce the starch so that it will permit the workman to sponge it on the fabric, affords a capital base upon which to letter or ornament. After the letters, etc., have dried, the surface may be sponged over with warm water for the purpose of extracting the surplus size.

In painting and finishing canvas or cloth tops it is invariably good policy to sandpaper the surface upon both the size coat and the first coat of paint. All this will help in subsequent coating of the surface and in lettering and ornamenting.

DESIGN FOR UPHOLSTERING A DROP LANDAU.

It is the experience of the world, particularly the old world, that convention, like prejudice, dies hard; it struggles and kicks against the hands that would tear a moss-covered antiquity clean to the bone, though a community would be vastly enriched by the operation. Human nature is so tied, and has such an affinity for the things that have been, that in these things the unwritten law is so often more powerful than the statute of a State.

And so it is in getting out improved or new designs; the things that have been must play a part, and an important part, in the endeavor to get the improvement to catch on. This is the universal experience in carriage building, the thing improved must have a strong family connection to the part to be put aside. It is thus that improvement overlaps improvement, until the original state is wiped off the common platform of things that have obtained.

The design offered here for trimming a square landau is shorn of much decoration that has become stereotyped almost. In this design the pockets, which are a usual feature in the door squabbing, have been dispensed with, and the full surface of the door dressed in one uniform squab, while the garnish rail depth is shown in panel, on which a card case is worked in the front part, and a door pull shown at the hinder part. These little necessary nick-nack fittings lend a rich relieving finish to the door's dressing.

The design in Fig. A is in column pleating with diamond copings in the quarters; a pocket is worked in the back-quarter, but the front quarter is left plain with full column pleats.

The door squabbing is in full diamond setting, and column pleats, with the top and bottom of the garnish rail finished in

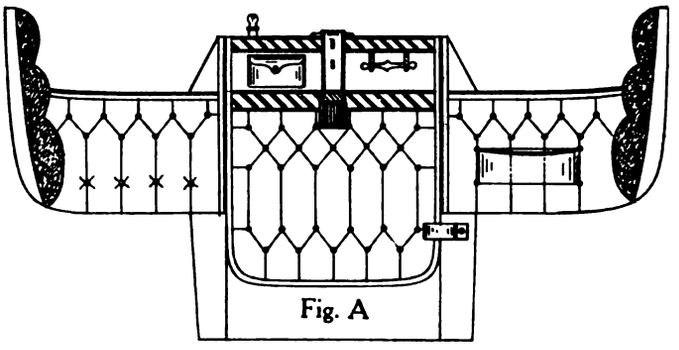


Fig. A

broad and narrow broad lace. The elbows, door and body pillar edges are finished in seaming and pasting lace.

The end sections of the back, and front rest squabs, are also shown in Fig. A.

Fig. B shows the design of the back squab, which is in harmony with the body quarters and door.

Fig. C shows the lines on which the cushions are worked up, the diamonding being large for the purpose of easy dusting, and to give a more comfortable seating than is obtained with short

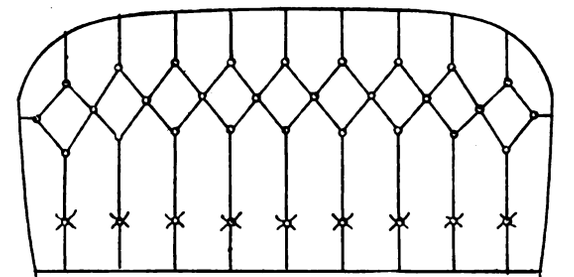


Fig. B

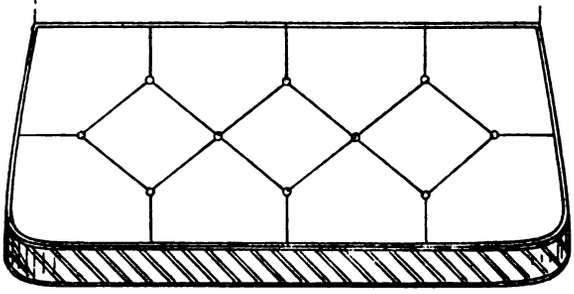


Fig. C

diamonding, which tends to stiffen the surface of a cushion. The front of the cushion in border is made in broad lace, 3 in. wide, and edged with seaming lace.

The material used in the squabbing is morocco, the most popular being dull grained dark blue and dark olive green. The lace is of course silk throughout.

The card case in the door dressing is made in morocco, and the door pull of ebony, held with strapping covered with morocco, while the glass string is made of dull silk, finely ribbed,

Digitized by Google

and finished in morocco to match the squabbing. Acorn column tassels look the smartest to finish the ends with.

The whole design is smart, without being loud or ostentatious, and perfectly in harmony with the character and style of the carriage itself.

WASHINGTON NEWS LETTER.

Doings in the Carriage Trade in the C. B. N. A. Convention City for 1909.

Washington, D. C., April 1, 1909.

As the Carriage Builders' National Association will hold its annual convention and exhibition here this fall, the readers of The Hub will no doubt take a keen interest in what is going on in the carriage trade here at this time. The local committee is keeping in close touch with Secretary McLear, and the prospects are bright for one of the best meetings ever held by the organization.

This is the second time Washington has been called upon to do the honors for the C. B. N. A., the fifteenth convention being held here in 1887, at which time Henry C. McLear was elected and began his long and continuous career as secretary, and the Technical School was placed on a more substantial footing.

The carriage trade has been very quiet for the past year. The gradual inroad of the various means of locomotion has been felt very severely. Many of the carriage firms are now handling automobile goods and making body repairs. There is a great diversity of styles of carriages and automobiles here, on account of the foreign legations from all countries and every State in this country being represented. There are of course quite a few who prefer a horse to any other way of getting around, like Theodore Roosevelt, but the present occupant of the White House, President Taft, prefers an auto. Washington having more miles of asphalt than any other city in the world naturally is a great city for driving, and on the main avenues, which are all 160 feet wide, presents a panoramic scene on nice days.

The people of Washington are educated up to being able to make their own selections in any line, and are disposed now to pick out the better grades when buying. There is less buying of the cheaper grades than ever. In any line of trade the better goods have the preference.

The carriages that are in demand are the runabouts, cutunders, stanhopes and bus-buggies. The sale is limited on depot wagons and broughams, owing to the inroads of the auto. The heavy carriages are not having as good a sale. The victoria and station wagon sales have been curtailed considerably.

The last two years have been slow with the trade, but this spring's trade is showing up well, and all expect a good season for the carriage trade. Those who go out for pleasure are generally behind high stepping horses, but many people use their autos week days and the horse and carriage Sundays.

There used to be a great deal of carriage and wagon building here, and quite a few ambulances and police patrol wagons were also made, but there is nothing doing in that line now. Since the strike two years ago, the trade has drifted to other points and this city has never recovered. The strike has never been declared off.

The way the district government is run now, and according to the plans of beautifying the city, which are extensive, this city will be the most beautiful city in the world.

Thomas E. Young, 464 Pennsylvania avenue, reports a quiet business, and says it is always quiet before May or June, when it is expected to improve. Mr. Young has a repository and carries a good line.

S. D. Waters & Son, 310 Pennsylvania avenue, sell carriages and harness. This firm was incorporated February 3 for $15,000. S. D. Waters is president; C. J. Rixey, treasurer; Robert L. Waters, secretary. This firm is the exclusive agency for the Watertown Carriage Co., and a new spring stock of up-to-date carriages and harness is arriving in order to be prepared for a good trade. The building has been renovated inside and out. A line of delivery wagons will be carried.

John M. Doyle & Co. have removed their carriage repair and rubber tire agency from 109 Sixth street to 322 Pennsylvania avenue. Blacksmith work will be done as well as all kinds of carriage and wagon repair work. John M. Doyle is manager. They have much larger quarters than before.

The McDermott Carriage Co., 310 Pennsylvania avenue, used to make a great many ambulances and heavy trucks but have gone out of that part of the business and only do repair work now. They used to do a lot of government work. Since the McDermotts died the business has been continued by Frederick Bix and Robert L. Murray.

The Rock Creek Wagon & Auto Co., at 2613 Pennsylvania avenue, a repository and repair shop, has been closed up.

William Sauter & Sons, Fourteenth and B streets, doing a carriage repair business, have gone out of business and the property will be used by the government.

The F. P. May Hardware Co., 634 Pennsylvania avenue, handling carriage hardware, say that business is opening up, that the season will start early, and are adding to their lines all the time.

Mr. Kendall, of the J. B. Kendall Co., carriage makers' supplies, C and Four and a Half streets, died a short time ago and the business is now continued with Mr. Hooker as geenral manager. They report that business kept up well for a dull season and has been better than for several years. Prices on iron and steel work vary and depend some on the tariff. They say they don't take any long contracts as prices are fluctuating.

A. J. Staebler, 931 D street, has a repository, and says business is quiet. He is now making auto tops and general repairs, which is attended to by C. Mortellaro.

S. J. Meeks' Sons, 622 G street, say that new carriage work is very quiet. They also do auto work and general body repair work.

Frank Dietz, 208 North street, Baltimore, has gone out of business and closed up an old landmark. The house was formerly Graff, Faithe & Davenport, and carried on a high grade carriage business before the war. Mr. Davenport died many years ago. Mr. Graff died in the 90's. The firm then became Faithe & Dietz, which went on till 1905, when Mr. Dietz took the business himself and he closed up January first, this year. He has gone into the real estate business.

Mr. Riddlemoser, of the firm of Riddlemoser & Weatherly, an old carriage manufacturing firm, recently died. Mr. Weatherly died many years ago. The firm had a big plant on Fayette street, Baltimore. They made high grade carriages and had a nice trade. The business is closed up now.

George M. Siebert, 52 Canal S. W., makes wagons and does repair work. He has put in electric power, put new machinery in, doubled his capacity, has eight men at work, and will put more on in a month. He makes a specialty of delivery wagons.

Louis Hartig, wholesale carriage supplies, K and Seventh streets, says he anticipates a good year in his line, and the general delay in business conditions he attributes to newspaper agitation as to breaks in prices in certain lines, of which a great deal is unfounded.

The St. Louis Carriage and Wagon Builders' Club has just issued a price book, which perhaps contains the most complete schedule of prices of any similar book yet published. The prices published are what the members aim to get for their work, but there is no ironclad understanding binding them. However, they insist that these prices are what the work scheduled is worth, and it should not be done for less if the manufacturer wants to make a legitimate profit. The book can be secured by outsiders from the secretary, Arthur L. Wittich, care McCabe Carriage Works, St. Louis, Mo., upon the payment of $5.00.

Digitized by Google

General Topics of Interest to Trade

C. M. A. OF A. BULLETINS.

Evidence of Activity By the New Association—Financial Support of Trade Asked.

To all wholesale carriage manufacturers of the United States:

This association was organized September 10, 1907. Its object, broadly stated, is to improve general conditions in the vehicle manufacturing industry. Thus far its members believe the work and influence of the organization has been beneficial to the entire industry; and they also believe that greater results can be obtained if the organization can be placed on a more permanent and active basis.

Co-operation is the spirit of the hour, and the carriage industry should be in a position to act in harmony with other manufacturing industries which have permanent organizations, and which distribute their products through the same channels. Our association is receiving requests from other organizations representing manufacturing industries, and from jobbers' and dealers' associotions, to co-operate with them in bringing about needed reforms and the improvement of conditions confronting the manufacturer, jobber and dealer.

In order to meet these conditions, our members believe we should have a permanent secretary who can devote his entire time to the interests of the association, with a permanent office located in Chicago or elsewhere. Up to this time the organization has had a temporary secretary, who was able to devote only a small part of his time to its work.

The employment of a permanent secretary and maintenance of a permanent office will carry with it greater expense. The secretary should be a man of a high order of ability; he must be diplomatic and forceful, and be able to appear before meetings of the carriage builders', jobbers' and retail dealers' organizations, and explain the objects of the association and effectively urge the reforms that are advocated.

Up to date the organization has used in its work about $7,000. In addition to this, individual members have expended a great deal of money and time attending meetings which have been held at regular intervals in Chicago, Indianapolis, Detroit, Cincinnati, New York, St. Louis, Kansas City and Charlotte, N. C.

The present membership does not feel like assuming all the expense necessary to meet the requirements of a permanent organization, which would perhaps approximate $12,000 to $14,000 per year.

They take this method of communicating with all wholesale carriage builders in this country, and ask them to lend their financial help, at least, and their moral support, if they will, to bring about such results as are possible through a better and permanent organization. If unwilling to become a member at this time, will you not assist financially? We invite a reply to the following questions:

(1) Do you believe this organization has been a benefit?

(2) Do you think it advisable to employ a permanent secretary?

(3) How much per annum for a period of two years will you contribute, the same to be payable in quarterly installments in advance?

Kindly mail a reply to our secretary at his address. Your prompt attention will be highly appreciated.

By order of the executive committee.

E. V. Overman, Secretary,
909 Summer street, Cincinnati.

BULLETIN No. 19. (General.)

Every manufactured product should be sold on such a basis as will not only yield a good dividend to the maker, but permit the accumulation of a sufficient surplus to tide the business over dull periods and unexpected casualties. It is generally conceded that many vehicle manufacturers would have had a more disastrous experience during the past year, but for the good work of this association. There will be difficulties in the future the same as there have been in the past.

The advent into farm life of the telephone, automobile and interurban electric railway has undoubtedly displaced the farmers' buggy to a considerable extent. Add to this a dull year now and then, and we are confronted with a present and future condition that must have serious consideration. This reduction in output—this expense of idle capacity—must be made up in some way. A higher price—a wider margin of profit—is the only safeguard.

Neither the manufacturer, jobber nor retail dealer makes enough profit on vehicles. No manufacturer can establish his business on a permanently prosperous basis, without permanent and prosperous customers. The interests of the maker and buyer are mutual. The maker is therefore vitally interested in the welfare of the buyer. He needs your assistance in many things, and in helping him, you are helping yourself.

It is the prime object of this organization to cultivate friendly relations with all organizations of jobbers and retail dealers. Every influence should be exerted to encourage and induce them to secure better prices and shorter terms, and to eliminate unjust and expensive reclamations upon manufacturers. This can be accomplished through effective organization.

The members of this association have been paying as annual dues one-twentieth of 1 per cent. on the total of an average year's business. Your careful consideration of the enclosed address of our executive committee to all carriage builders is desired. The members of this committee have given this matter deep thought. They are all men of large experience, and representing, as they do, many States of the Union, their opinions are entitled to respect.

Respectfully submitted,
E. V. Overman, Secretary.

BULLETIN No. 20. (Members only.)

The meeting in Chicago, February 10, of the executive conference and membership committee of this association was well attended.

After the transaction of routine business, the committee on credit exchange submitted a blank form for use of members. The same was adopted, and the secretary was instructed to have it printed and supplied to the members. This is being done, and 100 of these blanks will be forwarded to each member within a few days.

It was the consensus of opinion that the association should employ a permanent secretary and establish a permanent office. Your attention is called to bulletin No. 19 and the address of the executive committee on this subject, both of which have been sent to every carriage maker in the United States.

Respectfully submitted,
E. V. Overman, Secretary.

FARM WAGONS SELLING TOO LOW.

The National Wagon Manufacturing Association of the United States at a recent meeting bewailed the fact that farm wagons sold far too low. High priced material, which overcame the slightly cheaper iron and steel, is the chief cause. Increased overhead expenses also contributed their part. The members believe that implement manufacturers are in the same boat if

Digitized by Google

the facts were known. They desire such an adjustment of prices as will place it upon those who are profiting by good markets and high prices to pay a sufficient addition for their wagons to allow the wagon makers living profits.

The wagon makers have not been able to obtain the margins on their work, which the volume of invested capital demands. The course of the most important raw material they use is upwards. The trouble will become more serious until absolute necessity will force an advance.

CINCINNATI CARRIAGE MAKERS' CLUB.

Annual Meeting and Election of Governors Who Subsequently Name New Officers.

The regular monthly dinner of the Carriage Makers' Club was held at the Grand Hotel, Cincinnati, Ohio, March 11, being the date of the annual election. At the conclusion of the dinner the meeting was called to order.

The applications of Albert O. Schulze and J. Neuman were received and both were elected to membership.

James F. Taylor offered the following resolution:

Whereas, Through the protection given them by the fifteen per cent. duty now on cattle hides, the large beef packing corporations have secured control of the hide market of our country, and they are now entering into the business of tanning a portion of their product, which enables them to manipulate prices to the serious disturbance of trade and disadvantage of manufacturers and consumers of leather fabrics. Therefore, be it

Resolved, That we urgently request the National Congress to relieve us of this oppression, and place hides on the free list, as is now done by other civilized nations, thereby removing the unnecessary burden of an extra cost on leather fabrics which has become a tax on all consumers, and which tax goes, not to the Government, but pours into the coffers of the already too powerful beef monopoly.

Resolved, That the secretary be instructed to mail copy of resolutions to President W. H. Taft, and to each National Senator and Representative of Ohio now in office.

The discussion of the question brought remarks from A. S. Brown to the effect that the carriage makers could really not afford to postpone some action in the matter. Mr. Armleder mentioned the matter had come up some time previous but no action was taken. Mr. Luth stated the Carriage Builders' National Association was the first to take any action on this question, it having come up at the meeting in Atlanta in 1907.

Mr. Taylor's resolutions were amended to include the appointment of Mr. Armleder to go to Washington as a representative of the carriage industry and appear personally with other delegates in their behalf. The resolution carried (F. H. Rose dissenting).

Charles R. Stevenson gave an illustrated talk on "Factory Costs." His instructions were given careful attention by all present. At the conclusion of his remarks the election tellers reported result of the election as follows: E. H. Hargrave, 76; H. H. Nelson, 74; Jas. R. Swan, 59; L. D. Lutz, 48. These were elected directors for two years.

Subsequently the governors met and elected the following officers: President, M. J. McNamara; vice-president, E. H. Hargrave and L. D. Lutz; secretary, R. D. Nibert; treasurer, H. H. Nelson.

Following are the chairmen of the committees for the year: Entertainment, Alfred S. Brown; press, Howard S. Cox; freight classification, A. G. Brunsman; legislation, Caleb Shipley; labor, Otto Armleder; insurance, E. N. Galbraith; good roads, W. F. Robertson.

N. H. Stacy sold his interest in the J. S. Rowea Mfg. Co., at Beaver Dam, Wis., dealers in implements and vehicles, to B. S. Barber and N. C. Rowell.

A DEFINITE KNOWLEDGE OF COSTS.

Address Delivered by Chas. R. Stevenson at March Meeting of Cincinnati Carriage Makers' Club.

I desire to express my appreciation of the opportunity which you have given me to discuss with you this evening the base upon which the ultimate success or failure of any business rests, that is—a definite knowledge of costs.

In the early days of manufacturing in this country little or no attention was paid to this most important subject. The margin of profit was so great that there was no necessity of doing so. As competition has increased and the complexities of the manufacturing business have multiplied, a definite knowledge of the cost of output has become more and more an absolute necessity to the successful operation of a business. It has become so from two points of view:

First, from the necessity of knowing the cost in order to determine intelligently upon the selling price, and, secondly, from the necessity of knowing the cost at close intervals to determine whether or not the different departments of the producing factory are being run in the most efficient manner.

In regard to the first necessity, you may say that a knowledge of costs makes little or no difference to the manufacturer in setting the selling price since his selling price is set by his competitors. This is true, but in the long run the selling price must be based more or less intelligently upon the cost of the product. No group of intelligent American manufacturers are going to continue, year after year, selling their output for less than it costs them to produce it.

Let us grant, for the sake of argument, that your selling prices are set by your competitor, the necessity for a knowledge of cost in relation to selling price still exists, for in your own hand rests the choice of whether or not to meet the selling price which your competitor has set when you have the knowledge clearly before you that in doing so you are subjecting yourself to a loss.

The second necessity which I mention is one which is less frequently brought forward in a discussion of the cost question. To my mind it is fully as important as the first.

My early training was received in the steel business where the margin between selling and cost is still so great that a knowledge of cost from the selling point of view is not necessary to a successful operation of the business. All of the successful steel companies, however, are to-day operating an extremely accurate and detailed cost system purely from the point of view of gauging the efficiency of their department heads.

The evolution from complete ignorance to a detailed and accurate knowledge of costs has been gradual and is still in progress. Some industries, notably the steel industry which I have already mentioned, have practically completed the evolution. Some have not started and others are about half way up on the ladder of progress. It is in this latter class that you gentlemen belong.

The first step away from cost ignorance led to the determination of costs upon an estimated basis. This, as I understood it, is the prevailing method in the carriage business to-day. Now, gentlemen, there is as much difference between an estimated cost and an actual cost as there is between a New Year's resolution and its subsequent fulfillment. An estimated cost is a statement of what your product should cost granted that certain conditions which you can not predicate come true. An actual cost is a statement of what your product has cost under the conditions prevailing during its manufacture.

The necessity of an estimate will always exist. On most goods manufactured it is necessary to set a selling price before they have been produced. Before setting this selling price an estimate must be made. The more closely this estimate can be made to approximate the true cost the nearer right the selling price will be. An accurate knowledge of true costs is, then, the prime necessity of an accurate estimate.

Digitized by Google

The estimating methods employed by the carriage manufacturers vary considerably; some are good, some are poor and others are simply rank. There is as much difference between estimating methods as there is between cost methods.

The reason why more manufacturers have not adopted efficient cost methods, and this I think is the reason that applies to your industry, is because of the fear of entangling themselves in an inordinate mass of red tape and clerical expense. I must admit that, based upon a study of a great deal of the cost work which has been done in this country, this fear is a justifiable one.

In actual practice I have found it just as disastrous to have too much cost system as it is to have too little. In this, as in everything else, however, there is a reasonable mean. It really requires the drawing of an intelligent line between the theoretical and the practical. It is the ability to draw this line intelligently that the man who attempts to install a cost system must possess if he expects to make a success of his work.

So far I have confined myself to a discussion of the necessity of obtaining cost knowledge by the individual factory. I now wish to speak of the very much more important phase of the subject—the necessity of all of the members of an industry working out and obtaining their cost knowledge upon a uniform basis.

The obtaining of cost knowledge is not an exact science. There are so many factors to be considered in a complete cost, so many elements which may be omitted or handled in a different way, that two factories operating under the same conditions, producing the same output, and yet operating under a different cost system, may obtain radically different costs on the same article.

Now in an industry where the competition is as close as it is in the carriage business, and where, as I think you will agree with me, the selling price must eventually be regulated more or less by the cost of the article, will it not give you all a very much better basis for arriving at this eventual selling price if you can all get together and agree to work out your costs in the same way?

You gentlemen are, I take it, all in business for the same purpose, namely: to make as much money as you legitimately can—you are willing to see the other fellow make his share so long as you get yours. It is this feeling which has led you to form your Cincinnati club and your national association. Naturally at your meetings here and at your national meetings, when you meet the carriage makers from other parts of the country, the question of costs must be an important one.

How often are any two manufacturers able to agree on even the estimated cost of the same buggy? Is it not true that one man will claim that a certain price will show a profit on a certain buggy, whereas his friend declares he can not sell at that price without incurring a loss? Hasn't this happened to all of you time and time again? What is the reason for it? Simply because you and your associates are doing your estimating, which takes the place of costs in your industry at the present time, on an entirely different basis. How much more satisfactory your discussion would be if you were both arguing from the same point of view!

This is a necessity which has been felt and met in other trades and it seems to me the sooner you meet it in yours the sooner you will succeed in placing the carriage business of this country upon a thoroughly sound and profitable basis.

It will, of course, remain true, even when you are all figuring on the same basis, that some factories can produce a certain article cheaper than others owing to their larger size, their better shipping facilities, their better labor situation and many other factors which influence the cost of the output. This is a natural business condition and can not be avoided. The favorably situated factory is entitled to the extra profit which its favorable situation brings to it.

It is not fair, however, that Jones, who figures his costs without making any proper allowance for depreciation or work done on parts which subsequently prove defective, should, basing his judgment upon this incomplete basis, name a selling price which can not be profitably met by Smith who is including these most necessary factors of cost in his figures.

I have now endeavored to show you the necessity of costs versus estimates, and, from the point of view of the general welfare of your industry, of using a uniform method of figuring these costs. I now want to urge upon you the necessity of making these costs complete.

Costs are, as you know, composed of four elements—productive labor, meaning labor which enters directly into the finished products, material, meaning material which enters directly in to the finished product—factory expense, which covers all expenditures of every nature whatsoever with exception of productive labor, material, selling expense and investment—and selling expense, which is the cost of disposing of your product.

It is not a difficult matter to obtain a fairly accurate and complete knowledge of the labor and material entering into a given carriage. It is, however, an extremely difficult matter to obtain a definite and complete knowledge of the expense in the factory. Later on I am going to make an effort to show you how this can be done in an extremely simple way. At the present time I merely want to urge upon you the necessity of making this factory expense absolutely complete.

It must include all non-productive labor expended throughout the factory. It must include all productive labor on parts which subsequently prove defective. It must include all productive material which prove defective and on which a loss is incurred. It must include cost of supervision, of power, taxes, insurance, general office and executive work. It should include a reasonable charge for depreciation and interest on money invested in the business. It should be made so complete that at the end of the year there can be no possible reduction of the profits through unlooked-for expense costs.

The selling expense is, of course, a different proposition and must include all money expended in marketing the product.

If my arguments up to this point have been at all convincing the thought which must arise in you gentlemen's minds is, "That is all very well, but how are we going to get at this without spending a lot more money for clerk hire than the thing is worth?

If I am not using too much of your time I will endeavor to show you as briefly as is possible how this may be done.

Let us take up, first, the most difficult—factory expense. At the present time the general custom in the carriage trade is, as I understand it, to add factory expense as a percentage of the total labor and material cost. Just how the percentage used is arrived at varies, I believe, in different establishments, the most common practice being, perhaps, to use during the present year the percentage for the past year or for a past series of years.

This is a clear indication of your present position on the ladder of progress. Practically all the industries have passed through or are now in the stage where expense is added on this basis. As a matter of fact, it is a thoroughly unfair and inadequate basis. Let me see if I can illustrate this to you.

If you will turn to Exhibit 1 of the little bunch of forms which I have handed you, you will find a definite illustration of the effect of the present method compared with the effect of the method which has gradually come to be adopted as correct by the majority of industries where accurate cost keeping is practiced. The approved method is to figure factory expense in its relation to productive labor.

As a matter of fact, what is it that you spend the money known as "factory expense" for? To keep your productive labor employed. If you did not employ this productive labor practically all of your expense, with exception of your selling expense, would cease. (Discussed exhibit comparing two methods of adding expense.)

It is not enough, however, to consider the factory expense as a percentage of the entire productive labor employed in the factory. As a matter of fact, this expense varies in the different departments and should be determined by departments and

Digitized by Google

expressed in relation to the productive labor employed in that department. The actual expense then involved in operating each department should be worked out monthly and at the end of each month an expense percentage arrived at showing the relation of the expense to the productive labor in that department for the month just passed.

It is through a constant comparison of these different percentages, which will vary considerably from month to month, that a reduction in the operating expense of the departments may be brought about.

For cost figuring purposes these percentages fluctuate too rapidly to permit of their use, and it is, therefore, advisable to use an average figure representing in your industry, I should say, the year just past, dropping off each month the thirteenth month back and including in the average figures the figures for the month just completed. In this way a slowly varying expense per cent, for each department will be arrived at, which should be used in calculating the cost of the product from the selling point of view.

These expense figures should be presented in the form of monthly reports, which may well take the form of Exhibits 2-4-5 among the forms which I have handed you. These expense figures are arrived at from the books, from the payroll, from the waste reports and from the repair department reports.

At this point it may be well to explain how the general books must be handled in order to arrive easily at these expense figures on a monthly basis. For this purpose we enter all expenditures of every nature whatsoever in a distributing journal or voucher register, as per Exhibit 6. All items pertaining to expense are entered in the expense column with number or initial showing the expense account to which they are charged. At the end of the month an analysis of this column is made and transferred to the expense analysis sheets.

Selling expense is, of course, a different proposition and should be expressed as you now express it—in relation to the selling value of your product, that is, if a buggy with a factory cost of $20.00 sells at $30.00 and the relation of your selling expense to your total sales is as one to ten, $3.00, or 10 per cent. of the selling price, should be added to the factory cost of $20.00, making a cost of $23.00 when sold.

We come now to the question of labor and material. In most industries these matters are kept track of by putting the goods through the factory in definite lots and keeping track of the actual material and labor expended on each lot during the article's progress through the factory. It seems to me that in the carriage industry this method would not be practical. Buying, as you do, most of your parts from outside sources and in this way knowing their cost exactly, and performing, as you do, most of your labor operations on a piece work basis, it seems to me that your labor and material costs are fairly standard, barring the labor which is expended on parts which subsequently prove defective, the material which proves defective and which can not be returned to the maker, and the operations which are done on a day work basis.

All labor performed on a day work basis should be charged to an operation and the total number of units produced in that operation should be kept track of. A unit day work cost for each operation can thus be arrived at, which should be used in the estimates and which will represent the true cost of that work.

Definite reports should be turned in daily of all defective material, and the labor performed on this defective material should be carefully calculated.

The product of each department should be recorded at least weekly and the estimated labor and material value of this product should be arrived at and compared with the actual labor and material cost of operating the department.

The labor cost of operating the department can easily be arrived at by means of the payroll and in factories large enough to operate a stock room the material cost can easily be obtained by keeping track of the material issued to the various purchasing departments. In factories not large enough to operate a stock room the comparison between the cost of the material actually put into the department and the material value of the product can only be arrived at at longer intervals. This, it seems to me, could best be done by taking inventory of raw material on hand in the different producing departments at intervals of a month and arriving at the difference between the material value of the product and the cost of the material consumed for the monthly period.

These facts should then be shown on a department statistic sheet, as per Exhibit 7, which may be operated weekly or monthly, depending upon the size of the factory.

To compare the cost value of the product with the labor and material actually expended in the department, will render an absolutely exact estimate necessary from the cost keeping point of view as well as from the point of view of determining the approximate cost of the article before manufacturing for the purpose of setting the selling price. For this purpose the writer would suggest a form as per Exhibit 8.

In the ordinary plant all of these methods can be carried out with little or no clerical increase—one additional clerk for the largest would be all that could possibly be necessary.

This discussion has of necessity been very brief and very much of a sketch, but I trust I have succeeded in giving you some general idea of the possibilities that lie along these lines. I should be very glad to answer any questions that any of you gentlemen may care to ask.

I thank you for your attention.

DRAYS NEEDED IN PERNAMBUCO.

Use of Old Vehicles Forbidden—Market for Vehicles "Knocked Down" and Unpainted.

Consul George A. Chamberlain, of Pernambuco, calls the attention of American manufacturers to the demand recently created in that Brazilian city for modern drays.

Pernambuco is the converging point of three railways which penetrate the interior of the Brazilian State of Pernambuco and of all the small water craft from a distance of over a hundred miles up and down the coast. These railways and craft are constant feeders for the drays that serve as a link between the points of arrival and storehouses, wharves, etc.

Considerable hauling business is done in that city. The dray facilities for handling freight have been inadequate, the bulk of the work being done on low, four-wheeled ox carts, 2½ feet wide by about 8 feet long.

Four years ago a law was passed withdrawing licenses from these carts and from all other springless vehicles, and has recently been revived by the mayor. It is now affirmed that after March of 1909 no springless vehicles of any description will be allowed on the streets. As a consequence an industry of wagon building has sprung up, and wagons are being rapidly introduced.

So far no importations of any account have taken place, the new wagons being almost entirely manufactured on the spot. Owing to the high cost of materials here and poor facilities, it is probable that American manufacturers could compete in spite of import duties and freight charges.

In filling orders shippers should be especially careful to follow instructions to the letter. More than one American carriage has been abandoned in the custom-house because the manufacturer thought he would give the buyer a surprise and paint it, against instructions, for nothing, little knowing that it meant $100 to $200 difference in the duty. Carriages shipped "knocked down" and unpainted pay from 50 to 75 per cent. less duty than the same articles finished.

The Walter G. Stearns Co. has been incorporated to manufacture cars, carriages, vehicles, etc., capital $5,000, by Walter H. Stearns, 540 West Fifty-eighth street, New York, and others.

Digitized by Google

SPECIAL TRADE NEWS FROM MICHIGAN

Newsy Notes by our Correspondent Concerning Well Known Carriage and Automobile Manufacturers in the Wolverine State.

Will Double Capacity.—The Weston-Mott Co., of Flint, is preparing to double the present capacity of its plant at Hamilton and Industrial avenues. Plant for a large addition in the rear have been drawn. Hubert Dalton, vice-president of the company, says that it is the intention of the concern to have the addition ready for occupancy by July 1. The new portion of the factory is to be 350 feet deep and 165 feet wide, the same width as that of the present building, which, exclusive of that portion used for office purposes, has a depth of 530 feet. When the addition has been completed, therefore, the building will have a total depth of 880 feet. A portion of the addition will be two stories high and the rest one story. Mr. Dalton says that the enlargement of the factory means the employment of an additional force of men—between 350 and 500. There are at present 680 employes on the pay roll. The Weston-Mott Co. located in Flint a little over two years ago, coming from Utica, N. Y.

Much Ado Over Little.—The creditors of the Continental Automobile Co., of Grand Rapids, have petitioned to have the company declared bankrupt and a temporary injunction has been issued to restrain George Metz, holder of a chattel mortgage covering the bulk of the assets, from disposing of them at private auction, as he is said to have intended doing. Homer M. Freeland is requested as receiver in the petition. The concern's liabilities amount to $1,000 and the assets are given as over $4,000.

Entertained Department Heads.—The Cadillac Motor Car Co., of Detroit, entertained the heads of departments at a dinner at the Hotel Pontchartrain recently, in recognition of the co-operation in the standardization of the automobile made by the company. The Dewar trophy, a magnificent silver cup won by the Cadillac in England was in evidence at the spread.

Another Detroit Auto Plant.—Joseph M. Ward has been appointed a district agent of the newest addition to Detroit's already large list of auto manufacturers—the Hupp Motor Car Co. This concern will manufacture 500 cars this year, to be known as the Hupmobile—a roadster for two, built to be marketed at a popular price. It has a four-cylinder engine of 20 horsepower, and the makers claim for it any speed up to 50 miles an hour. It has been designed by E. A. Nelson and others interested are R. C. Hupp, Mr. Hastings and Mr. Peterson, all of whom have been in the automobile industry since its inception in this country. The design of the Hupmobile includes several unique features, including rear spring construction, a hot air connection for the carbureter, which does away with the necessity for adjustment in various climatic conditions, and clutch and transmission enclosed in an extension of the crank case, the latter shifting without noise in the operation.

Will Operate Dowagiac Auto-Car Plant.—The bankrupt factory of the J. V. Lindsley Auto Co. has been purchased by the new Dowagiac Auto-Car Co. It is the intention of the new company to continue the manufacture of the old Lindsley car and also to manufacture auto delivery trucks.

A $20,000 Blaze.—The plant of the Rands Manufacturing Co., makers of auto tops and specialties, 51-55 Macomb street, Detroit, recently was partly destroyed by fire, entailing about $20,000 loss, half of this sum being in stock and the other half on the building. Spontaneous combustion was the cause. The damage was covered by insurance.

Working Overtime.—The Everitt-Metzger-Flanders Co., at Port Huron, has installed ten new machines for the manufacture of autos at its plant in Pine Grove avenue. The output will be considerably increased and the working force added to. Many of the men already are working nights and on Sundays. Supt. Chas. Adams says that the outlook for business is of the best.

From Clothing to Auto Building.—Further particulars about the Hudson Motor Car Co., of Detroit, mentioned in the last issue of The Hub as having been incorporated with $100,000 capital, are as follows: It is a close corporation organized by J. L. Hudson, who owns a string of department stores in various large cities in the Middle West, and includes several of his business associates. The articles mention besides Mr. Hudson, R. B. Jackson and Geo. W. Dunham. Mr. Jackson formerly was general manager of the E. R. Thomas Co. and Mr. Dunham was chief engineer of the Olds Motor Works. For the present the plant is located in that formerly owned by the Northern Motor Co., at Champlain street and Canton avenue.

Englishman Gives Advice.—A. E. Lambie, of London, England, distributor for the Reo Motor Car, and who was recently traveling through Michigan, while in Lansing mentioned a plan he had for an amalgamation of interests whereby he believes American-made autos could be given a much stronger position in the European markets and which would enable them to hold the bulk of their foreign trade against the world. His suggestion is that several of the plants manufacturing different types of autos combine forces and work together in harmony, instead of continuing the present "guerilla warfare."

Threatens Trouble for Infringers.—Henry Ford, president of the Ford Motor Co., of Detroit, has threatened to sue several auto manufacturers who, he claims, have infringed on his patent Ford final-drive.

A Motor Cycle Is a Vehicle.—No less authority than the supreme court of Michigan has so decided. As a vehicle it comes under the provisions of State laws governing them. The test case was that of Henry G. Smith, who was convicted in recorder's court, in Detroit, for refusing to equip his motor cycle with a registration number. He appealed to the supreme court on the ground that his cycle was not a vehicle within the strict meaning of the law, but the judge held otherwise in confirming the verdict of the recorder's court.

New Superintendent.—Wallace R. Willett, for the last three years in charge of the mechanical department of the salesrooms of the Buick Motor Co., of Flint, in Chicago, has been appointed superintendent of the Marquette Motor Co., of Saginaw. This is the concern which was organized recently with a capital stock of $300,000 to take over the automobile plant of the Rainier Co., at Saginaw, which was closed down for several months.

Tour of Inspection.—A tour of inspection of the plants in Michigan controlled by the big General Motors Co., recently was made by Messrs. C. R. Hathaway, of New York; F. L. Smith, of Lansing, and W. C. Durant, of Flint, representing the executive committee of the General Motors Co. Accompanying the party were Messrs. E. R. Campbell, W. J. Mead, W. H. Little and A. H. Goss, of Flint. The plants visited were in Flint, Saginaw, Owosso, Jackson, Pontiac and Detroit. The entire trip was made in a special car. F. L. Smith, general manager

Digitized by Google

of the Olds Motor Works, when seen on the trip, said of the Lansing concern that the output would be increased at least 50 per cent. over last year, which will mean that at least 1,500 cars will be manufactured the coming season. To increase the output more buildings will be necessary. A new building will be erected for the manufacture of auxiliary parts, in connection with the Olds motor plant.

Wants to Pay a Dividend.—C. V. Taylor, receiver of the Standard Vehicle Co., of Pontiac, has asked the instruction of the circuit court as to whether he shall pay a 25 per cent. dividend upon the joint claim of H. F. Messenger, C. Brace and J. A. Graley, recently allowed by the court at $8,121.46.

Old Heads in New Concern.—Articles of association have been filed by the Marquette Motor Co., a new organization at Saginaw, to be located in the plant formerly occupied by the Rainier Motor Car Co. The capital stock of the new concern is $300,000, and its officers are: President, W. C. Durant, Flint; vice-president, A. T. Ferrell, Saginaw; secretary-treasurer, A. H. Goss, Flint; board of directors, W. C. Durant and A. H. Goss, Flint, and A. T. Ferrell, Saginaw.

The general management has been entrusted to Mr. Goss, who is now secretary of the Buick Motor Car Co., of Flint, of which Mr. Durant is president. Of the capital, $175,000 is subscribed by stockholders of the Buick Co. and the remainder by Saginaw parties originally interested in the Rainier investment.

The active work of organization was done by Mr. Ferrell, who bought in the Rainier plant at receiver's sale. The Marquette Motor Co. will build a high grade, high priced car along the line formely laid by the Rainier concern. The $100,000 bonds of the Rainier Co. have been discharged. A building for assembling purposes and, later, others will be erected. About two thousand 1909 models will be put on the market.

New Additions to Merger String.—The General Motors Co., of New York, wherein J. Pierpont Morgan is said to hold stock, has added to its string of Michigan auto concerns the Reliance Motor Co., of Owosso. Last month it was rumored that the Buick Co., of Flint, had closed a deal with that concern. However, the report was not far wrong, as the Reliance and the Buick now are part of the General Motors Co. The other Michigan companies in this syndicate are: The Olds Motor Co., of Lansing, and the Oakland Auto Co., of Pontiac. Besides these there is the Maxwell-Briscoe Co., of Tarrytown, N. Y., Pawtucket, R. I., and Newcastle, Ind.

Big Auto Plant for Ann Arbor.—The Triple Motor Truck Co., $340,000 capital, is the name of a concern to manufacture auto trucks in Ann Arbor, that has been formed by Frederick O. Paige, of Detroit, who was general manager of the Reliance Motor Truck Co., of Owosso, and H. A. Wilcox and Andrew H. Bachle, of Owosso, also formerly of the Reliance Co. Six hundred men will be employed and 600 trucks a year will be made.

Changed Names.—The Norris Auto Co., of Saginaw, has changed its name to the Saginaw Auto Co.

New Michigan Incorporation.—The following companies have filed article of incorporation with the secretary of state: Motor Car Device & Repair Co., Detroit, capital $10,000; New Belle Isle Motor Co., Detroit, $5,000; Royal Oak Lumber & Supply Co., Royal Oak, $15,000; Auto Commercial Co., Detroit, $8,000; Gile Boat & Engine Co., Ludington, $50,000; Marquette Motor Co. (already mentioned in another item), Saginaw, $300,000; Brush-Chicago Motor Co., Detroit, $11,000; Detroit Scoop Truck Co., Detroit, $10,000.

Freak Wagon.—The Kelly Ice Cream Co., of Grand Rapids, has had built for it a "freak" wagon, which may stand as a model for other vehicles intended for like purposes. This delivery wagon has a large tank refrigerator in the front, having a capacity of from 100 to 175 gallons of ice cream in five-gallon cans. Separated from this by a narrow passage way is a refrigerator box capacity for about a ton of cracked ice. The tanks make the delivery of the ice cream easy, without the waste resultant from other forms of delivery.

OVER-CUTTING OF CONNECTICUT'S FORESTS INDICATES GENERAL RATE OF CONSUMPTION.

It has been estimated that the amount of wood annually consumed in the United States at the present time is twenty-three billion cubic feet, while the growth of the forest is only seven billion feet. In other words, Americans all over the country are using more than three times as much wood as the forests are producing. The figures are based upon a large number of State and local reports collected by the government and upon actual measurements.

The State Forester of Connecticut, in a recent report, has given figures on growth and use for New Haven county, which give many more valuable details than are generally to be obtained, and well illustrate how the forest is being reduced by over-cutting. In this county a very careful study was made on each township of the amount of forest, the rate of growth, and the amount of timber used. For the year 1907 the timber used was 120,000 cords, in the form of cordwood, lumber, ties, poles and piles. The annual growth on all types of forest land, including the trees standing on abandoned fields, for the year, reached a total of 70,000 cords. Thus the amount cut yearly exceeds the growth by 50,000 cords.

The amount of standing timber considered as merchantable and available for cutting within the next few years was found to be 1,200,000 cords. Each year the annual growth increases the supply on hand by 70,000 cords, while the use decreases it by 120,000. The net reduction is therefore 50,000 cords a year. If the cut and the growth remain at the present figures, the supply of merchantable timber will be exhausted in about twenty years. At the end of that time there will be a large amount of forest standing in the county, but it will be in tracts under forty years of age, containing wood below the most profitable size for cutting. Cordwood could still be cut, but supplies of the most profitable products, like ties and lumber, would be practically exhausted.

Connecticut's case illustrates what is meant when the exhaustion of the timber supply is spoken of. It does not mean that every tree will be cut and that the ground will be bare. It means, on the other hand, that year by year the people of the country are cutting more timber than the forest grows, and that within a comparatively short time the continued loss will have so reduced the forest that it will be difficult and expensive to obtain timber of useful size in sufficient quantity.

THE REAL TEST.

The records of large factories go to show that the price of a machine or a tool-machine counts for little when compared with the service of a first-class one. It generally proves to be false economy to buy a certain machine because it costs less. The cheaper may do the work as well for a while, but as time goes on, depreciation and output proves that the best machine is the cheapest. The difference in advantage of the poorer with the better, as measured by the week, does not stand out prominently, but when measured by the year it shows that it is false economy to equip a plant with the cheaper makes of the equipment. Makers are gradually leaning to but one type—the best possible and in this they are supported by the progressive and far-calculating carriage builders.

Frank Elder has disposed of his vehicle and implement business in Clay Center, Kan., to Grant Chapin, of Green.

Digitized by Google

Among the Manufacturers

It's Up to the City Council.—Between twenty and twenty-five thousand dollars will be expended in an addition to the plant of the Wisconsin Carriage Company should the Janesville city council grant the petition for an overhead tramway by means of which the carriage company proposes to connect the new addition with the old buildings. The company has secured an option on the piece of real estate opposite their factory. Upon this piece of land it is proposed to erect a three-story and basement brick building, and connect it with the old factory with a runway over Milwaukee street. The runway, should the petition be granted, will be of steel, twenty-four feet above the road and supported by steel pillars set as close to the curb as possible.

Now Building Gasoline Cars.—The Columbus (O.) Buggy Co. is now building a gasoline car. The car is of the four-cylinder, thirty-five horsepower type, equipped with the high tension magneto and all of the other modern parts of a machine which add to its simplicity. The new Columbus Buggy Company's gasoline car is made in three models—the runabout and rambler, the toy tonneau and the touring car body. The car, fully equipped, sells for $2,000.

Gratifying Showing.—The annual stockholders' meeting of the Frankland Carriage Company, at Jackson, Tenn., was held in March. The statement of the business done for the past year was very gratifying, and plans were laid for a larger business this year than has heretofore been attempted. The following officers were elected: F. M. Frankland, president; W. A. Caldwell, vice-president; M. D. Anderson, treasurer, and B. R. Person, secretary.

Equipping New Building.—H. E. Barclay, blacksmith and wagon builder on North Front street, Grand Rapids, Mich., is equipping a building, 40 x 80 feet, one story high, of brick construction and with cement floor, for heavy wagon work.

A Program of Extensions.—The McCue Company, of Hartford, Conn., manufacturers of automobile and carriage hardware, has filed a certificate of its action in increasing its capital stock from $50,000 to $150,000. The proceeds will be applied to a program of extensions.

In New Quarters.—Watts & Noye, whose factory at Lemoyne, Pa., was recently destroyed by fire, have secured new quarters and are now located at 28 North Cameron street, Harrisburg. The building, which has 7,500 feet of floor space, contains a complete varnish room, workrooms and display rooms.

New Studebaker Repository for Indianapolis.—The Studebaker Bros. Manufacturing Company, South Bend., Ind., has leased ground on North Pennsylvania avenue, Indianapolis, on which to erect a new repository and salesroom. A four-story building will be erected.

New Dump Wagon Concern.—The American Wagon Company has been organized at Pittsburg, Pa., and incorporated under the laws of Delaware, for the purpose of manufacturing dump wagons. The company has a capital stock of $100,000, three-fifths preferred and two-fifths common. It is reported that $30,000 of the capital stock has been subscribed and paid. The officers are as follows: President, Carl C. Conkle; vice-president, John M. Irwin; secretary, H. D. Brady; treasurer, S. C. Houston; manager, Joseph Stifter. The company expects to operate a plant at Dubois, Pa.

Receiver for Abbott-Downing Co.—George A. Foster, of Concord, N. H., has been appointed receiver of the Abbott-Downing Company, manufacturers of wheeled vehicles, whose extensive plant is one of the oldest and largest of Concord's industries. The receivership is the result of an understanding reached by the principal creditors, and under it the business will be continued without interruption. No statement of assets and liabilities is available at present.

This is one of the oldest carriage manufactories in the country, and was the originator of the celebrated style of vehicle known as the concord wagon. In stage-coach days it was the chief builder of coaches, having built many coaches for the government for use in Yellowstone park and for mail routes in various parts of the country. The company began business in 1813.

Building Pedestal for Moline Wagon.—The Moline Wagon Co. has begun the erection of four concrete pillars in the east end of its lumber yards on which will be permanently stationed the big wagon which has been used so extensively at State and national fairs to advertise Moline wagons. The pillars will be nine feet high and on top of them the huge wagon will be a conspicuous attraction for the eyes of the public on street and steam cars, in vehicles or afoot. The wagon is to remain indefinitely on its improvised pedestal.

To Teach Employes.—In order to broaden the knowledge of its employes regarding the automobile the Moon Motor Company, of St. Louis, is arranging a lecture course on practical car construction. Joseph W. Moon believes that a mechanic should possess a comprehensive knowledge of the construction of the entire car, although his work may be confined to making only a particular part.

Into New Quarters.—The American Motor Car Manufacturers' Association has moved to new and more commodious headquarters on the fifteenth floor of No. 505 Fifth avenue, New York City.

A Swell Office Building.—A contract for a handsome little office building of two stories, to be of stone and brick construction, has been let by the Fort Smith Wagon Company, of Fort Smith, Ark., acquired about two years ago by the Deere interests as a subsidiary plant. The structure will be rushed to early completion.

Creating a Preferred Stock.—The Hughes Buggy Company, of Lynchburg, Va., has been granted the right to issue preferred stock to the amount of $50,000 but not increasing its maximum capital.

To Manufacture Auto Wheels.—The Shortsville Wheel Company is making plans for manufacturing automobile wheels. This increase of manufacturing operations will likewise mean an increase in the number of employes by nearly one hundred men.

Will Make Autos.—The Schurmeier Wagon Company, Minneapolis, will go into the automobile manufacturing business. The company now manufactures a special business truck. Its engineer has worked out the plan for a light automobile truck which the company will start to turn out at once. The extra line will require an addition to the factory, upon which the company will decide in the near future.

Digitized by Google

ARE EQUIPAGES INCREASING?

Advent of Motor Cabs Operating in Favor of Horse Drawn Carriages for Select Private Use.

Brewster & Co. sent two consignments of carriages of their own make to one of the New York auction marts recently to be sold for the account of private families who are their customers, says the New York Herald. The prices realized for these high-grade vehicles were up to the top of the market, but compared with the prices current a few years ago the market values of to-day are poor indeed. A miniature cabriolet of recent design and in good condition was sold for $300; a brougham for $290, a canopy top vis-a-vis for $150, and a top side bar road wagon for $140. These figures represent a tremendous shrinkage from the cost of new work of equal quality, though not more, it must be said, than the shrinkage in second hand automobiles sold under the hammer. On the face of it, this sale, like all others in which second hand vehicles have been offered in the last two years, seems discouraging to those engaged in the carriage building industry, yet the cloud which is now hanging over the trade is not without its silver lining.

The carriage building industry has in the past survived many setbacks which at the time seemed as serious as the combined effect of the recent panic and the automobile invasion. Some of the shrewdest men in the country are now confident of the return of an active demand for pleasure vehicles at normal values, and have staked fortunes on the future of the business by investing hundreds of thousands of dollars in carriages at the low prices prevailing.

Effect of Telephones and Trolleys.

Old timers in the trade have not forgotten the effects of the introduction of the telephone and the trolley car. The former did away with countless horses and buggies kept for errand work throughout the country, while the latter, for a time, almost ruined the country livery stables by providing a novel substitute for the time honored buggy ride. After the trolley car came the bicycle, which for several years worked serious injury to the carriage building industry, and with it came two other changes in the existing order of things which proved to be even more serious than the bicycle, so far as the trade in town carriages was concerned.

The first of these was the widespread use of asphalt pavements, the introduction of which may perhaps be attributed to the bicycle craze. When these hard, smooth surfaces replaced the old stone and wooden block pavements in the principal cities of the country the period of usefulness in horses of all kinds was greatly shortened, which of course operated to improve trade, but with the life of the vehicle it was quite another story. They endured very much longer than before, and when rubber tires were introduced to supplement the saving of wear and tear, the carriage building industry suffered one of its hardest knocks.

Broughams, victorias and other vehicles fitted with these shock absorbing cushions, rolling over a surface almost as smooth as glass, became practically indestructible with ordinary use, and as styles never changed except in minor details of construction and ornamentation, such carriages, once bought, were hardly ever replaced. As showing the tremendous saving to the user and the corresponding curtailment of income to the builder it is said that a large per centage of the repair business of the carriage makers was killed in a few years by the introduction of rubber tires and asphalt pavements. The smaller wagon and carriage shops which had existed on this branch of the industry were everywhere forced out of business, and the larger establishments had to face a very serious shrinkage in what had been one of the most fruitful and profitable sources of work.

Succession of Handicaps to Trade.

Close upon the heels of these hardships came the automobile, which cut like a two-edged sword into the horse and carriage trade, first by supplanting the horse drawn vehicle in very many stables and again by making the highways and byways unpleasant and often unsafe for those who would like to still drive horses if they dared to do so. When the automobile invasion was at its height the financial earthquake of 1907 shook the trade to its foundation by flooding the market with second-hand vehicles and horses, thrown over in a tidal wave of liquidation, the like of which had never been seen. The advent of the taxicab, which within a year almost revolutionized the livery and hacking business in New York, added to the effects of the panic. Then followed the Presidential election, with its disturbing influence on business of all kinds, and after that the tariff agitation, which is still operating to check commercial and industrial operations, so that the carriage builder, in one way and another, has had a hard row to hoe in the last few years.

No one will ever know how many second hand equipages were thrown on the market by auction in New York in 1907 and 1908, but the number was a staggering one, and with the market wholly unable to assimilate them prices became demoralized. Speculators, dealers and shippers to distant markets took the bulk of the offerings and helped to relieve the situation, and, all things considered, the trade stood the shock wonderfully well.

A reaction set in early last winter, and at present the auction marts are short of offerings of many kinds, instead of being oversupplied. Prices for seasoned or second hand horses have advanced sharply and are again normal, dealers say. Carriages, which do not wear out like the horses that draw them, are still selling at bargain prices, though in the last few months some improvement has been noted.

What will happen when the flood of second hand material is finally assimilated and out of the market is now the question which all carriage builders and dealers are asking of one another.

Of high grade work next to none at all has been built in the last two years and but little new work of any kind has been sold. When a buyer can obtain a slightly used carriage by one of the best city builders for less than one-half the cost of a new vehicle of a lower grade, he is going to choose the second hand one nine times out of ten, and it is therefore only natural that the demand for new work should be at low ebb while these bargains remain in the market.

Enormous Sales of Used Vehicles.

The demand for second hand work has been of abnormal volume at all times during the last two years, according to every dealer who handles such carriages, and nothing less than an avalanche of offerings could have caused such an oversupply as the trade has seen. Enormous sales, even at the low prices current, serve to demonstrate that horse drawn carriages are still used by a very large number of persons, and to give encouragement for the future of the trade when once the surplus has been distributed. That such a time is not far distant seems to be indicated by the fact that certain makes and types of second hand vehicles no longer built even now command almost the prices of new work at private sale.

Many observers have lately remarked that well appointed broughams are more numerous on Fifth avenue than they were a year or two ago, and that their number is steadily increasing. It is regarded as significant, too, that nowhere else in New York is the proportion of such equipages seen in front of private residences so large as in the district between Fifth and Madison avenues. Some horsemen have shrewdly guessed that the advent of the taxicab is responsible for the change. Private families have always tried to avoid the appearance of the public cab in their equipages, and the theory is that, as horse drawn vehicles have given way to taxicabs on the hack stands of the city, they have increased in numbers for select, private use.

E. G. Wilson has purchased the vehicle and hardware business of Sethman & Holcomb, in Waldron, Kan.

Digitized by Google

OBITUARY

John Hassett.

John Hassett, president of the National Carriage Builders' Association, died at his home at the Highlands, Amesbury, Mass., March 23, aged 44 years. He was a native of Amesbury. He was graduated from the Salisbury high school at the age of 14, with the class of 1879, before the towns were united.

Mr. Hassett entered the employ of the Hamilton woolen company as an office clerk and remained several years. He was next with Frank A. Babcock, then Amesbury's largest carriage builder, as private secretary. From there he went to Cortland, N. Y., for a few years, returning in 1893 to enter partnership

John Hassett, of Amesbury, Mass.
Late President of C. B. N. A.

with his brother, James H. Hassett, and George E. Hodge, who were doing a carriage business under the firm name of Hassett & Hodge.

Mr. Hassett assumed charge of the office business and was considered one of the best financiers in town. He was actively identified with the business of the country, and at the last annual meeting of the National Carriage Builders' Association was elected its president. He was also president of the Amesbury national bank.

He is survived by two brothers, James H. Hassett and William T. Hassett, now in the west, and one sister, Mrs. Cecilia Kelley.

Henry Timken.

Henry Timken, president of the Timken Roller Bearing Axle Co., died at the Hotel Westminster, Los Angeles, Cal., on the 16th of March, aged 76 years.

His death was a surprise despite his years, for he was usually sturdy and rugged and his illness lasted but a few days. The remains were taken to San Diego for burial, which occurred on Saturday, the 20th, and the factory in Canton was shut down in tribute to his memory.

For twelve years Mr. Timken resided in San Diego, and the first sorrow to mar his happiness came with the death of his wife last December, when the two sons, Henry and William, made a record run across the continent from Canton, Ohio, and reached San Diego in time to see their mother alive.

Mr. Timken was born in Germany seventy-six years ago, and came to America when he was seven years old.

A pioneer in the manufacture of carriages, wagons and, later, automobile roller bearing axles, Mr. Timken began his business career, which has been so long and successful, in St. Louis, Mo., when the city had but 25,000 inhabitants.

His first patent, which he manufactured and put upon the market, was the Timken spring. This was followed by his own invention of the tapered roller bearing that bears his name. And it is these two devices which have made him known throughout the length and breadth of the land.

He was one of the first men to be elected to an office in the National Carriage Builders' Association, and for years served it with the same distinguished ability and faithfulness he gave to his own affairs. In 1895 he was elected president of the C. B. N. A., at the annual meeting in Cleveland, Ohio. The next year he was re-elected to serve for a second term at a special session of the executive committee held in New York City, no convention being held that year.

After a successful career in the carriage and wagon world of more than forty-five years, Mr. Timken retired from active business and went to live in San Diego, Cal.

Mr. Timken is survived by two sons and an unmarried and a married daughter, both of whom now are in Los Angeles.

The unmarried daughter resides in San Diego and the other is Mrs. A. S. Bridges. Mr. Timken's brother-in-law, John Ringen, of Los Angeles, was with him when he died.

Jacob Neuman.

Jacob Neuman, vice-president and general manager of the Stein Double Cushion Tire Co., of Canton, O., died on March 27.

Mr. Neuman for years has been a familiar figure at C. B. N. A. conventions, and his death will cast a gloom among his many friends, whom he numbered by the hundreds.

Clarence John Hunt.

Clarence John Hunt, aged 72 years, a well known carriage maker, died March 18, at his home in Springfield, Mass., from Bright's disease. Mr. Hunt was born in Warren Vt., in 1836, and when young removed with his family to Belchertown, where he received his early education and later was associated for many years with his father in the carriage making business. Mr. Hunt had been a resident of Springfield for the past twenty-five years, and had carried on the business of carriage making up to within two years of his death, when ill health forced him to retire. The last concern with which he was connected was the Bailey carriage shop on Dwight street.

Joseph Love.

Joseph Love, of Tremont, Ill., died in St. Francis hospital, Peoria, March 15, where he was taken a few weeks ago for treatment for stomach troubles. He was a wagon maker by trade and condicted a shop at Tremont for more than twenty-five years.

Louis P. Sayles.

Louis P. Sayles, aged 50 years, a carriage finisher in Trout's shop, at Elmira, N. Y., died March 11 of valvular trouble of the heart.

Howard C. Tyler.

Howard C. Tyler, for the past twenty years representing the H. H. Babcock Co., of Watertown, N. Y., in New England and the Middle States, died at his home, 914 So. Fifty-first street, Philadelphia, on March 9, aged 59 years. A widow and son survive him, the latter preparing for the university at Crozer Seminary.

Daniel F. Sargent.

Daniel F. Sargent passed away at his home in Geneseo, Ill., March 14, 1909, after an illness of four weeks' duration. Injury from a fall was followed by pneumonia, which was the immediate cause of his death. Mr. Sargent was born in New London. He engaged in business in Geneseo in 1857, continuing for fifty years, for many years being senior member of the D. F. Sar-

Digitized by Google

gent & Son Carriage and Road Cart Mfg. Co. From a small beginning the business of the company gradually developed until the products of the factory found a market in many foreign countries, and the export trade has increased with the passing years. Besides his wife, he is survived by one son and five daughters.

Abel F. Found.

Abel F. Found, a resident of Atlanta since the days of Marthasville, and one of the most widely known traveling men throughout the south and west, died at his home in Atlanta, Ga., on March 12. Some twenty-five years ago he formed a connection with one of the large buggy houses in Cincinnati and up to less than two years ago continued in that line.

Arthur C. Symmes.

Arthur C. Symmes, carriage manufacturer, died at his home, 23 Forest street, Medford, Mass., March 28, after a long illness. He was 53 years old and resided in Medford for many years.

Charles K. Wilcox.

Charles K. Wilcox, vice-president and general manager of the Pinneo & Daniels Co., Dayton, O., died April 2, aged 78 years. He was born in Killingworth, Conn., and early worked at wheel making. Thirty years ago he went to Ohio, stopping first at Sandusky, where he worked a year for the Sandusky Wheel Co., and then to Dayton, where he identified himself with the Pinneo-Daniels Co. He is survived by his wife and one son.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE CARRIAGE TRADE.

Patents Expired Feb. 16, 1909.

468,794—Dumping Wagon. T. Davenport and M. M. Doyle, Brazil, Ind.
468,905—Fifth Wheel for Vehicles. J. W. Williams and J. G. Capps, Lowell, Ark.
468,936—Shaft Attachment for Vehicles. C. H. Sherman, Glens Falls, N. Y.
468,971—Wheel Tire. H. Myers, Philadelphia, Pa.
468,978—Draft Equalizer. P. A. Thrasher, Prosser, Neb.
469,029—Vehicle Wheel Tire. A. L. H. Messmer, Gardner, Mass.
469,092—Vehicle. R. Rodgers, Cheyenne, Wyo.
469,118—Four-Wheeled Vehicle. G. A. Brice, Titusville, Pa.

Patents Expired Feb. 9, 1909.

468,397—Wheel. A. M. Reeves, Decatur, Ill.
468,494—Vehicle Hub. A. Hough, Dover, N. J.
468,496—Vehicle. G. H. Sawyer, Lamoille, Ill.
468,538—Vehicle Wheel. J. G. Rodgers and A. W. Grant, Springfield, Ohio.
468,565—Vehicle Shaft Holder. G. W. Killian, Lancaster, Pa.
468,678—Holdback for Vehicles. P. Mullane, Moline, Ill.
468,702—Horseshoe Groover. G. H. Smith, Skippack, Pa.

Patents Expired Feb. 23, 1909.

469,235—Wheel Hub. J. Edwards, Peru, Ill.
469,445—Vehicle Gear. C. Gussett, Cincinnati, Ohio.
469,504—Wagon Running Gear. F. Newhouse, Toledo, Ohio.
469,547—Horseshoe. G. Custer, Bremond, Texas.

Patents Expired March 1, 1909.

469,926—Thill Coupling. G. H. Allen, Brockport, N. Y.
469,933—Thill Coupling. C. P. Button, Milwaukee, Wis.
469,962—Machine for Upsetting Tires. E. Chaquette, San Francisco, Cal.

Patents Expired March 8, 1909.

470,216—Wheel Hub. M. L. Smith, Columbus, Ohio.
470,232—Vehicle Running Gear. G. E. Bartholemew, Cincinnati, Ohio.
470,239—Manufacture of Axle Blanks and Axles. O. C. Hall, Auburn, N. Y.
470,259—Trussed Axle for Vehicles. H. C. Reed and A. Clark, Kalamazoo, Mich.
470,271—Vehicle Pole. E. M. Van Valkenburg, Racine, Wis.
470,297—Wagon Spring. N. H. Hill, Armada, Mich.
470,354—Manufacture of Axles. E. E. Slick, Braddock, Pa.

The above lists of patents, trade marks and designs of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City.

THE AMERICAN SCRAP PILE.

Throwing Out Good Machinery to Make Room for Better.

One class of people has been exceptionally active during the past year or two, as is shown by the records of the patent offices, and that is the mechanical class, the people who invent tools and machinery. Just why there should be special activity at this time does not appear, but there is undoubtedly some reason for it. Probably it is due to the momentum which mechanical inventiveness has gained in the past quarter of a century, or to the conviction that there is a better time coming when there will be a market for everything which will do work better and quicker and at less cost.

In carriage and wagon work, and in harness equipment, a large number of patents have been taken out which are bound to find their way into manufacturing activities, says the Canadian Implement and Vehicle Trade. The patents mostly refer to modifications of processes to quicker ways of doing the same thing.

This country measures its mechanical progress by its "scrap piles," was a remark of a noted English observer after a very painstaking observation of American mechanical methods. What he meant was that lots of good machinery is thrown out to make room for better machinery, and this is a fact.

ANALYZING THE EFFECTS OF A 10,000-MILE RUN.

In speaking of the 10,000-mile non-stop record to be attempted by the Maxwell-Briscoe Co., Mr. J. D. Maxwell says:

"I did a little calculating the other night which shows what this engine will have to do in order to accomplish the undertaking. For example, in 10,000 miles the rear wheels will have to revolve 6,320,000 times, but this does not begin to show what the motor must accomplish. The Maxwell with which we will attempt to establish this new mark is a four-cylinder, 80-horsepower car, geared 3½ to 1. In order to cover the route the motor will have to turn over 22,200,000 times.

"Now let us carry this analysis a little further. In a four-cylinder motor of the four-cycle type we have two explosions or power impulses for each revolution, so that there will be 44,400,000 explosions in all four cylinders, or 11,100,000 explosions per cylinder. Think how perfectly every part of the engine must do its work. The carburetor must deliver 44,400,000 charges of gas, and the magneto must generate more than 44,000,000 sparks to fire these charges. One-tenth of a second, yes, one-hundredth of a second deviation, and the motor will stop and all our work be lost. A broken wire, a clogged carburetor, things that could be fixed in a moment in an ordinary tour on the road, would be sufficient to end this non-stop run."

The automobile engineers are devoting their time and energy to the increasing of car efficiency without increasing bore or stroke, and without additional cylinders. The increased efficiency sought to attain is 15 to 20 per cent. The general line of action lies in the direction of increased radiator capacity, more efficient water pumps, better carbureters, better construction of ignition systems, construction of valves in the heads of cylinders, and L rather than T type. Of course the standing problem of lubrication is not forgotten. Then concentration of effort along these lines shows how far the industry is from ideal perfection, and how much is yet attainable through a closer study of the laws of mechanism.

Nearly all automobile authorities agree that the coming season will be the banner automobile year, a prediction which it is safe to make. The automobile press states that a number of concerns are and have been for some time running to the limit of capacity, and that requirements are looming up faster than facilities afford promise of acceptance.

Digitized by Google

Trade News From Near and Far

BUSINESS CHANGES.

Smallegan & Smith, Central Lake, Mich., dealer in implements and vehicles, dissolved partnership. Harry Smith succeeds.

Steensland & Mason, Blanchardville, Wis., dealer in vehicles, implements, etc., sold out to Regez Olson Co.

F. L. Hilger, Adell, Wis., dealer in vehicles, implements, etc., sold out to Walter L. Higby.

D. M. Barlass, dealer in vehicles at Janesville, Wis., sold out to W. S. Haight.

George S. Ruhl and Fred J. Barth, doing business under the firm name of the Ruhl Carriage Works, at Bucyrus, Ohio, dissolved partnership by mutual consent, Mr. Ruhl purchasing Mr. Barth's interest.

C. C. Townsend & Co., Greensboro, N. C., have sold their business to the Townsend Buggy Company.

H. C. Kniffin, of Burlington, Vt., has purchased a half interest in the wagon business with John W. Coolbaugh, at Dundee,N.Y.

Lawrence Karges has bought the wagon shop and blacksmith business of E. A. Jenkins, at Scottsville, N. Y.

Geo. R. Perry has bought the carriage factory of his father, J. W. Perry, at Central Falls, R. I. He will close out his own business at Pawtucket and consolidate the entire business at Central Falls.

Boylan, Mills & Co., successors to H. H. Boylan & Son, dealers in carriages and farm implements, Altoona, Pa., have been incorporated with a capital stock of $15,000. The officers elected are Fred. A. Mills, president; William E. Mershon, vice-president; Otis H. Boylan, secretary-treasurer and manager. The new firm will materially increase the stock of carriages and buggies, and an agency for the Maxwell automobile has been established.

J. J. Hall has purchased the stock of vehicles, etc., of R. A. Morris, in Savannah, Mo.

F. J. Cross has purchased the hardware and buggy business of J. S. Hall, in Monticello, Ia.

W. H. Willis has purchased the vehicle and implement business of the Bridgeport Hardware Co., in Bridgeport, Neb.

J. F. Rasmussen has purchased the vehicle and implement business of Heck & Hagedorn, in Brunswick, Neb.

Chas. F. Koster has purchased the vehicle and implement business of C. C. Wood, in Augusta, Mich.

A. F. Siebrass has purchased the stock of buggies, etc., of Jones & Brandes, in Hastings, Neb.

Wm. Ruchte, of Schleswig, Ia., has sold out to Wm. Pipgras.

Lon Walter has sold his implement and vehicle business in Corning, Mo., to Leon H. Schwall.

H. R. Wade has purchased the business of the Ozark Wagon Factory Co., in Fayetteville, Ark.

Fochler & Martin have purchased the hardware and vehicle business of the New Mercantile Co., in Winona, Wash.

Vollerson Bros. have purchased the vehicle and hardware business of Storck Bros., in Battle Creek, Ia.

Reese & Andrews, dealers in vehicles, implements, etc., at Lima Center, Wis., is succeeded by I. L. Reese & Sons.

Billington & Ray, dealers in vehicles and implements at Arena, Wis., have dissolved partnership. Edgar Billington succeeds.

W. E. Slaugenhaupt, president of the Electric Renovating Co., Pittsburg, Pa., has purchased the stock of the McConnell Buggy Co., on West Malden street, Washington, Pa., and will continue the business under the management of W. G. Eckman. Mr. McConnell will continue to operate his blacksmith and repair and wagon building shop on South Franklin street.

The Canton (O.) Buggy Co., as a corporation, will be dissolved, but the business will be carried on by David L. Tschantz, who has become sole owner, under the old name of the Canton Buggy Co.

R. E. Hawkins has purchased the buggy and repair shop from W. D. Miller, at La Grange, Ga. Mr. Hawkins will soon put in quite a lot of machinery and make many improvements in the shop.

The carriage factory of James Graffum, Ipswich, Mass., has been sold to Messrs. Winch & Kent.

NEW FIRMS AND INCORPORATIONS.

B. F. Dollison and J. B. Alexander began business the first of April under the firm name of The Zanesville Buggy Company, at Zanesville, Ohio.

B. Martinez, of Monte Vista, Col., has decided to open a wagon factory at Basin, Wyo., and will expend $6,000 on the plant.

The Gottler Wagon Mfg. Co., capital $2,000, to manufacture wagons, trunks and vehicles, has been incorporated by Abraham Levin, 318 Blake avenue, Brooklyn, N. Y.

Homer Elton will start a carriage shop at Shawnee, N. Y.

C. A. Martin will establish a carriage building shop at Chateatgay, N. Y.

C. E. Ramsey has opened a buggy, wagon and harness store at Charlottesville, Ind.

H. F. Mills Co., North Lake, Wis., dealers in buggies, etc., it is reported have sold their property and will close out stock.

The Wiss Motor Mfg. Co., Milwaukee, Wis., has been incorporated; capital, $50,000.

The Longdin-Brugger Co., Fond du Lac, Wis., manufacturers of carriage and auto tops, have increased their capital from $5,000 to $40,000.

The Boise (Ida.) Carriage & Implement Co. has been incorporated with $25,000 capital, and will open a wholesale and retail implement house about May 11. D. M. Winser is president; D. E. Shumway, vice-president; Fred Williams, secretary and treasurer, and D. J. Bontrager, manager.

Samuel Knowlton, Jr., will start a carriage building, painting and blacksmithing shop at Wyoma, Mass.

Baker & McGrath have opened an implement, buggy and harness dealers store at Cheboygan, Mich.

Peter Sivers recently purchased a wagon making shop at Gloversville, N. Y.

Martin Zinser and Ben Lieland will start in the buggy business at Prescott, Ind.

J. J. Fairman has started a carriage and automobile painting shop at 817 Jackson street, Saginaw, Mich.

Wintershien & Peterson have engaged in the implement and vehicle business in Minden, Neb.

The Ferguson, Clancy & Reule Co. has been incorporated in Ypsilanti, Mich., with a capital of $16,000, to make carriages, wagons, etc.

H. A. Cotton, of Iuka, Miss., is to establish a wagon factory in Chickasha, Okla.

The Fredericksburg Buggy Co. has been incorporated in Fredericksburg, Va., with a capital stock of $25,000.

Coy & Buchanan are engaging in the vehicle and implement business in Sandpoint, Ida.

C. O. & J. A. Amundson are engaging in the hardware and vehicle business in Sunnyside, Wash.

Digitized by Google

Wolfe & Larson have engaged in the vehicle and implement business at North Lake, Wis.

One Galloway, formerly of Readstown, will engage in the vehicle and implement business at Soldier's Grove, Wis.

Jos. R. Heimerl will engage in the vehicle and implement business at Hilbert, Wis.

J. C. Van Arsdell has opened a vehicle store in Lawrenceburg, Ky.

Ed. Ayers is installing a complete stock of vehicles and implements in Mahaska, Neb.

The Virginia Spoke & Bending Co. has been incorporated at Martinsville, Va., with a capital of $15,000. N. S. Goode is president.

Olaf Mattson is opening a stock of buggies and implements in Ashcreek, S. D.

George R. Morris, of Presbo, S. D., has opened a branch vehicle and implement store in Vivian, S. D., with Geo. Ohlson as manager.

Ross & Anderson is the name of a new firm at East Cambridge, Mass., established to repair wagons and caravans.

BUSINESS TROUBLES.

Harry W. Wiedner, wagon maker of 1145 Third avenue, New York City, has filed a petition in bankruptcy with liabilities of $1,226 and no assets. The largest creditors is Charles C. Elston, of Middletown, N. Y., on a claim of $680 for damages to trees and property at Bloomingsburgh, N. Y., in 1907.

A petition for the appointment of a receiver for the National Wheel Company, Indianapolis, Ind., was filed March 10. Mrs. Blanche Anderegg, administratrix of the estate of her husband, the late Charles Anderegg, is the petitioner.

C. C. Downer and G. M. White, of the late J. B. Brewster & Co., New York City, were granted discharges from bankruptcy on March 22.

The Bodley Wagon Works, Memphis, Tenn., which has been in the hands of receivers for nearly a year, was sold for a consideration of $47,911.50 to a committee representing the stockholders of the defunct concern. It is understood that as soon as the sale has been affirmed by the court having jurisdiction the purchasers will reorganize the company and resume operations.

FIRES.

The Lewis-Neville carriage factory, located at Goshen, Ind., was destroyed with a loss of $10,000 on March 16.

Fire at Blue Mound, Ill., destroyed the Herman Michaels harness shop and wareroom for buggies. He had just recently put in a new stock of harness, and his loss will reach $6,000.

A warehouse building and contents belonging to the Jex Carriage Co., at Pittsfield, Mo., was destoyed by fire March 18.

The vehicle and implement stock of Jacob Schurck, Blue Hill, Neb., has been destroyed by fire.

The building occupied by the J. C. Wilson Carriage Co., 258 Cass avenue, Detroit, Mich., was slightly damaged March 26 when escaping gas exploded. A number of windows were broken and a small blaze resulted.

The J. B. Hamilton carriage factory at Middletown, N. Y., suffered damage by fire to the extent of $5,000 on March 31.

Incendiaries attempted to destroy the carriage shop of Wm. H. Dunbar, at Gloucester, Mass., but were unsuccessful.

A revival of interest in organized road building is now apparent wherever we look. Public and especially farming sentiment has been aroused to a conception of the importance of good roads. Favorable legislation has been enacted in a number of States with a view to immediate work. In some States work o na broad scale has already been begun. The country at last has entered upon a road building era which will last until good roads will cobweb the country and infinitely add to its productivity and wealth.

PARALLEL ROADS FOR TESTING.

Effect of Motor Driven and Horse Drawn Vehicles Will Be Shown.

With the decision of the Pennsylvania road supervisors, during their recent convention at Norristown, to build parallel strips of macadam or asphalted roadway for the purpose of testing the relative effects of automobile and horse drawn traffic, light will be thrown on a subject that has been a matter of argument for some years. The idea of the test is to satisfy some of the members who hold divergent opinions about the amount of road deterioration that can be charged to the self-propelled vehicles and to horses.

The assertion was made during the convention that the automobiles were largely responsible for the deterioration of the roads. This was resented, the argument winding up in the offer of a supervisor who uses an automobile to stand the bulk of the expense of building two strips of road exactly alike, the one to be used for automobiles, the other for other types of traffic.

It has been held ever since the automobile came into popular use that the suction of the pneumatic tire on the road surface, helped by slippage, skidding and other incidentals to continuously fast automobile traffic, has been the great cause of harm to highways. Another theory is that the tractive force, or shear, exerted by the driving wheels is the main factor of injury.

On the other side, it is argued that the smooth pnematic tire of itself has little effect on the road surface. The dust it raises and helps to remove, it is claimed, is part of the road surface loosened by the iron shod feet of horses. The only similar effect on roads as a result of automobiling is from the use of anti-skidding devices, which are employed, however, when the highways are muddy rather than dusty.

For the purpose of studying the action of the pneumatic tire on an average road, some interesting tests were conducted by W. L. Page, director of the Office of Public Roads, last summer. The cars used were of various shapes and sizes, from the 4,000 pound limousine to the small runabout. The most interesting result, in Mr. Page's opinion, was obtained with a sixty horsepower car stripped for racing. The wheels of the car were thirty-six inches in diameter, with four inch front tires and four and a half inch rear tires. The entire weight, including the driver was 2,800 pounds.

This car was driven over a level section of broken stone road at speeds varying from five miles an hour to sixty miles an hour. The road used was a section of a government road which had been resurfaced two years previous to the test and was in very good condition. Up to fifteen miles an hour little or no effect was produced on the road, and even at twenty miles an hour it was judged by those present that no serious damage was done. From twenty miles an hour on, however, the effect was markedly noticeable with each increase in speed.

Summing up the results obtained, Mr. Page declared that the pneumatic tire, or any type of tire which propels a vehicle, must have sufficient tractive resistance to overcome the load of the vehicle. This, of necessity, must cause a shear on the road surface, which varies with the weight and speed of the vehicle. The broken stone road, with a smooth surface, he concluded, has little power to resist a shearing stress, consequently the fine material of which it is composed is thrown into the air. Once lifted from the road, this material is subjected to the effect of air currents generated by the body of the car, and large quantities are carried away.

Whether or not the parallel strips of road to be constructed for the experiment in Pennsylvania will be given any special treatment designed to lay the dust is not known. It is presumed, however, that the two sections will be of the ordinary macadamized variety, without oil or other dust laying treatment. The result of the experiment will be awaited with interest throughout the country.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

Endless Modifications

A year or so ago the automobile press in descanting on the perfection then arrived at, complimented the industry on the assumed fact that for all practical purposes the automobile was a perfected machine. The flood of improvers and inventors which has since then kept the patent office busy, and these shops busy adapting their methods to their new improvements, do not believe that they are impractical or that their work is not necessary. On the contrary, the automobile is not a completed machine, even as to certain fundamental principles. A very careful reading of automobile literature shows that there is room for, and prospect of, revolutionary changes, and that there is a set of problems which call for more exact knowledge than exists, the discussion of which forms no small part of automobile literature and discussion in trade circles. But these unsolved details do not interfere with the prosecution of the commercial side of the work.

Making Skilled Labor

The demand for trained experts in the handling of automobiles has resulted during the past few months in the establishment of a school or two in the East and one or two in the West, in connection with automobile plants. Trained apprentices are needed. Automobile construction is being so rapidly specialized that a mere general acquaintance with constructive details will not answer. In one establishment the course of instruction covers three years, two hours a day, four days in the week. This arrangement is found to be practicable. The Bell Telephone Company has tried it on a more extended scale, and it has now at its command a corps of experts capable of handling any ordinary trouble.

The experiment will probably be made by many large automobile plants where there is a chronic scarcity of skilled and specialized labor. Thereby the efficiency of labor can be increased, and at a cost that is negligible compared with results. The industry will never be on a stable foundation until it supplies itself with its own-made skilled labor.

Small Shows

The increase in the number of dealers in small towns and cities is resulting in the foundation of associations for displaying their products in shows. This is an excellent advertising detail, and arouses public interest and makes customers. There is interest in a single machine, but when ten, twenty or fifty or more are presented under one roof and one united management, there is a charm or stimulus in the direction of ownership which is wanting where there is only one. The great central exhibitions have proven this. At the present time arrangements are under way for the holding of several score of small automobile exhibitions, and it is safe to say the result will be worth many fold the cost to the town and city dealers who make these shows possible.

Runabouts

There is fair promise for the growth of demand for runabouts weighing from 350 to 500 pounds and of 7 to 10 horsepower. The newer makes present several inviting features, one being an improved method of steering by the front axle. The automobile public who could use such light vehicles has been hard to convince and slow to accept the assurances of builders that the little affairs would go all right and hold together. Two or three concerns which have made something of a specialty of light runabouts inform us they have cleared the road of objections and doubts, and that orders secured for the coming season assure pretty steady employment for the capacity furnished. The bodies are fine specimens of carriage builders' skill and taste.

AGITATION FOR SEPARATE SHOW.

Motor Truck Builders Believe Exclusive Exhibition Would Serve Best Interests.

Agitation has been started among the manufacturers of commercial cars for a motor truck show next year to be held entirely apart from the regular automobile exhibitions, of which the utility cars have been so long a subordinate part. The commercial car, despite its great possibilities for economical transportation, has always been at a disadvantage as compared with the pleasure car in its yearly presentation to the public.

In former years, before the field of the utility vehicle had reached its present importance, it fell naturally into the train of the more extensively used pleasure car. Now, however, this section of the industry has reached a stage where it easily stands on its own foundation. Builders of motor trucks number more than one hundred, and a majority believe that their best interests would be served by an annual exhibition devoted wholly to the motor truck and its accessories.

The time for such an exhibition would naturally be at a suitable season of the year. It is improbable that the men interested would select December or January. Here is another point upon which the commercial vehicle interests feel that their participation in the pleasure car show fails of its greatest benefit. There is little or no opportunity for practical demonstrations in the ordinary show season, although a motor truck did succeed in giving an extraordinary demonstration of its capacities during the period of the recent Palace show.

Wonderful strides have been made in the commercial field in the last two or three years. For every class of power wagon practical and exhaustive investigation as to the needs of the user, with severe tests to uncover weaknesses in various services, have been made by manufacturers, and at the present time the maker can practically guarantee satisfaction in every

Digitized by Google

type of vehicle from the lightest delivery wagon to the most ponderous truck.

The principal requirements in commercial vehicles are simplicity, in order to leave the least responsibility on the operator, and stability, a feature by which the buyer can form an estimate of possible cost of operation. Accessibility of parts, workmanship, finish, light fuel consumption and convenience in loading are all part of these general requirements which the advances in construction have brought prominently to the fore.

The commercial vehicle of to-day is revolutionizing the transportation industry, and its effects will be more greatly felt as the business man realizes the economy that has become part of power driven vehicles. It is not claimed by the producers of heavy machines that the minimum of expenditure for operation and repairs has been reached. The assertion is made, however, that the power driven vehicle at its present stage furnishes by far the most economical method of short distance transportation.

The question of obtaining competent operators has been greatly simplified by the increased simplicity of operation. Power plants are now being placed where they can be reached without difficulty; the work of running a truck has become less troublesome, and these conditions are bringing into the field a good class of men.

The difficulty of finding operators for power driven trucks is, of course, greater than in getting competent horse drivers. The former, however, can demand better wages because of the much greater amount of work they can accomplish, and this is naturally an aid in inducing men to enter this new branch of the transportation service. Some of the manufacturers are at the present time able to furnish drivers for opening up new lines in power driven service, either permanently or until such time as the user can develop his own help.

Special service ideas in motor trucks are to-day the aim of the designer and builder. Where formerly a few types of trucks were utilized for all needs, to-day there are dozens of types adapted exactly for the various requirements. Municipalities are using power driven cars in many ways, the most important of which are for police patrol, ambulances and fire service.

The taxicab business is growing and expanding tremendously in scope. Practically every city in the country is now enjoying the use of these public cars. The underlying features of the taxicab are, of course, similar to those of the pleasure vehicle, but they have come to be recognized as part of the commercial vehicle field.

Other uses of the commercial car are in the way of delivery and express work and heavy trucking, while in the government service they can be found in many forms. For whatever use, however, their economy is becoming increasingly evident, and the realization of this, it is strongly felt, can be best brought home to non-users by a show in which the motor truck will not be brought into competition with the pleasure car.

PAINTING THE AUTOMOBILE BLUE.

The blue automobile, despite the chill which its big, cold field brings to the observer at the first glance, is a mighty fetching outfit, except when the color is made too deep, which disadvantage should be avoided. A medium ultra marine marks a far depth of blue for the automobile, and beyond that it is not wise to go, except to fill individual orders.

An excellent way to get a rich effect in medium ultramarine consists in bringing the surface out clear and smooth and absolutely free from surface defects. Then whip a few atoms of Prussian blue into some flake or silver white, to bring up a color approximating an azure blue. Thin with turpentine and apply with a camel's hair brush. Lay the color all one way, and flawless. Then when dry apply a coat of flat azure blue, likewise laying this color all one way. On top of this color, when dry, apply a coat of medium ultramarine blue, simply thinned with turpentine to dry flat, except that it is always a safeguard to add, say, half a dozen drops of raw linseed oil to a pint of thinned color. Lay this color on with a double thick camel's hair brush of a size sufficiently large to enable easy working over the largest panels.

Then stir into it a quantity of elastic rubbing varnish, enough of the ultramarine blue to enrich the varnish. Beat the pigment, before adding it to the varnish, in turpentine, to a cream-like consistency. Then add gradually to the varnish, stirring the mass actively meanwhile. Half an ounce of pigment to each pint of varnish will furnish the necessary surface enrichment. A greater amount of pigment is likely to cloud the effect, which is the one main thing to be avoided. Give this coat of glaze plenty of time to dry, after which flatten the lustre by rubbing it lightly over with a soft wool sponge moistened, and dipped in pumice stone flour. Wash up thoroughly, and apply a coat of elastic rubbing varnish, into which before application, stir a few drops of the ultramarine blue. This will insure preservation of the purity of the blue. This blue may for especially admirable effects be striped with lines of black, varying as the size of the body may suggest, from 1-16 to 1-8 inch. However, for almost any size double parallel lines of the 1-16 inch style are to be preferred to the 1-8 inch line, as it furnishes the full amount of color contrast without adding apparent weight to the vehicle.

Fine lines of arctic, or silver white, or ivory white, cast in double parallel lines from ¾ to ⅝ inch apart, likewise furnish beautiful effects.

SURFACING THE AUTOMOBILE.

Because of its size and sweep of outline the automobile surface is uncommonly conspicuous, and being such it demands a very workmanlike style of surfacing in order to condition it for the finish which every well regulated auto should have. Even the ordinary touch-up and varnish job needs a good, uniform rub-over with water and pulverized pumice stone, under the friction of a ½ inch perforated rubbing pad, to break down and smooth away the knots and knobs of surface accumulations which upon the automobile appear to loom up about twice their natural size. Upon the surface to be repainted either by first using a foundation of rough-stuff, or by simply laying the color directly upon the paint structure, sandpapering with No. ½ or No. 1 sandpaper, worked down close and hard, will be in order. Without this necessary sandpapering the subsequent finishing operations will appear, as they actually will be, at a great disadvantage. Varnish will illuminate and enrich the surface, but it will not conceal surface defects. Rather will it exaggerate them, and upon the big, far-reaching auto surface it seems to have extraordinary power in this respect. All surface granulations and roughness reduced upon the old paint foundation will lessen the work of surfacing at a later stage of the painting process.

The same rule holds true of the running parts. Such parts are desperately hard to clean, taking one machine with another, and one of the really expeditious ways is to saturate the greasy parts with turpentine and then permit them to stand over night, adding a fresh application of turpentine in the morning. Gasoline, benzine, etc., are entirely too volatile for cleaning purposes, and they lack the penetration and dissolving power of turpentine. Having made the running parts free from grease and oily saturation, proceed, if the job is to be painted throughout, to sandpaper the surface down sharply, taking especial care to level away all the gritty substances, etc. In case of a thorough repainting, use No. 1 sandpaper in working the surface down to the proper degree of fineness, which same paper will also suffice for the body surface.

It takes more time, of course, to work the surface out at this stage to a perfectly smooth and fine condition, but it saves time, labor and material, ultimately, and is therefore cheaper.

A true man may be a faithful follower, but he could never be a bold imitator.

Digitized by Google

EFFECT OF AUTO ON GOOD ROADS.

Scarcely Seven Per Cent. of American Highways Can Be Said To Be of Improved Construction.

In the road building of the next twenty-five or fifty years the automobile will play the same part that the steam locomotive played three-quarters of a century ago. To awaken the people from their lethargy regarding road building some such force as the locomotive or the automobile must be responsible. Men may use horse drawn vehicles all their lives and never get beyond the point of saying that the roads should be improved But no man can own an automobile and drive it one hundred miles without becoming a strong advocate of good roads. Within the next few years the question of good roads will be one of the leading commercial issues of the day, perhaps the chief issue, not excepting the tariff.

The United States is far behind Europe in this character of improvement, although excelling in a majority of others. The causes may be stated generally as follows: Imperfect State laws; inefficient administration and management of roads; ignorance on the part of local road builders of the principles and methods of road construction and of the qualities essential in road building materials and lack of facilities for ascertaining such qualities; lack of sufficient research and experimental work to devise changes or improvements in road materials or existing methods of construction sufficient to meet modern conditions, to reduce cost or increase efficiency.

George C. Diehl, of Buffalo, now chairman of the Good Roads Board of the American Automobile Association and Engineer of Erie county, is an expert on highway construction and was an important contributor to the success of the national good roads convention held last July. In a recent interview Mr. Diehl furnished the data and outlined the policies set forth below.

That the development of good roads in this country has only begun is shown by the statement of the national Department of Public Roads that of the 2,150,000 miles of public roads in this country scarcely seven per cent. can be said to be improved. The object of the good roads movement is the establishment of properly developed systems of improved main and lateral roads throughout all the States in the Union and the careful and systematic maintenance and preservation of such systems when completed.

The farmers and automobilists, among many others, receive direct benefit from the construction of good roads, and, although every one practically receives direct or indirect benefits, the most active agencies in obtaining good roads must be the farmers and automobilists, as organized in the National Grange, the American Automobile Association, representing the automobilists, and the National Association of Automobile Manufacturers, the Association of Licensed Automobile Manufacturers and the American Motor Car Manufacturers' Association, representing the automobile makers.

It will be but a few years before we must stop using the terms farmers and automobilists and say rather farmers and tourists, as with a properly developed system of good roads the farmer will find it more economical to market his produce with motor vehicles.

The federal Good Roads Department states that the direct saving to the farmers of this country from properly constructed roads would be $250,000,000 annually; that there would be a saving of over $10,000,000 in marketing the wheat crop alone, of over $12,000,000 in marketing the corn crop, and of $5,000,000 in marketing the cotton crop. Great as the money value of good roads may appear to be, however, it is not as important as the educational and social advantages to be derived therefrom by the residents of rural communities.

Bad roads restrict educational facilities, limit the rural free delivery service and prevent the proper development of social life in the country. Good roads permit of grade schools in the country, extend rural free delivery service, and check the exodus of young men and women from the farm to the city. Already in localities where roads have been improved we see the movement from the city to the farm.

As a rule the farmers are more wide awake to the necessity of good roads than the residents in the cities, as proper highways affect directly their comfort and prosperity. This is not a problem for a single locality; it concerns vitally the States and the nation. Therefore, it is eminently proper that, inasmuch as the States and the nation share in the benefits of road construction, they should contribute their share of the expense.

Several of the richer Eastern States are engaged in extensive improvement of their road systems. But even here many towns are too poor to improve the lateral roads and must depend entirely upon State aid. Moreover, many States are unable to carry on the work alone and require national aid. It appears reasonable that such aid should be extended through State authorities under national supervision, rather than by the construction of national trunk lines.

Automobilists and farmers, by frequent good roads conventions, by campaigns of education and by individual and organized activity, can bring about sufficient appropriations by towns, counties, States and nation. It is a part of their duty to see that these moneys are expended wisely, under competent direction, and in accordance with systematic and well organized plans.

The systems now in operation in the State of New York can be commended highly to many of her sister States, particularly in the matter of classification of roads outside of cities and villages. These roads are divided into State, county and town roads. The State roads are the main traffic lines connecting the larger centers of population. They comprise four per cent. of the total mileage of the State and are to be constructed and maintained directly by the State and at State expense. The county roads are those which form within each county a properly developed system of main market roads, taking into account their use for the purposes of common traffic and travel.

These roads comprise about six per cent. of the total mileage of the State and are constructed under State supervision and at the joint expense of the State, county and town. The town roads comprise the remainder of the roads of the State, constituting about ninety per cent. of the total mileage. They are built and maintained under the direction of the local authorities, but under State supervision, the cost being borne jointly by the State and town.

The problem of scientific and at the same time practical construction of roads is most difficult. At recent conventions automobilists and farmers have called road experts to their aid. Until a few years ago the problem of macadam construction was thought to have been fully solved in the countries of Europe, where more than $5,000,000,000 has been expended in the construction of more than nine hundred thousand miles of roads, in maintaining which more than $150,000,000 is expended annually.

In France more than $1,025,000,000 had been spent on macadam roads, and through proper maintenance these roads were kept in a high state of efficiency, but in the last few years these roads have rapidly become materially disintegrated. Last year an international congress on good roads was held in Paris. Road experts from all over the world were called in conference to ascertain the proper form and type of construction of macadam roads.

There are wide differences of opinion on this subject. Nearly all the road preservatives have advantages, but none seems to be up to the standard sought. The convention adjourned to meet again in two years, the time being set far enough ahead in order that the various methods of road construction being experimented upon could be properly tested.

The National Good Roads Board of the American Automobile Association, through its different State Good Roads Boards and in co-operation with the many local automobile club good

Digitized by Google

roads committees, acts as a clearing house on all good roads problems and complaints. The Board furnishes copies of the most approved good roads laws to the automobilists in the different States, all of whom are encouraged to ask for good roads information and to register "kicks" directly to the Good Roads Board, rather than to protest indiscriminately and unavailingly.

All complaints are forwarded to the appropriate highway officials in the several States where road departments are sufficiently organized. In States where there is not sufficient organization the resident member of the Good Roads Board is furnished with statistics and urged by co-operation with allied good roads bodies to stimulate public sentiment to an appreciation of the necessity of proper highway laws and proper organization to systematically construct, maintain and repair the various sections of highway.

The first National Good Roads and Legislative Convention called by the American Automobile Association, co-operated in by the National Grange, the American Road Makers' Association and the entire automobile industry, was held in Buffalo, N. Y., last July and was productive of good results. There is a better understanding between the various organizations, which has resulted in insistence that another similar but broader and larger good roads and legislative convention be held this year.

NEW PRINCIPLE IN AUTOMOBILE SPRINGS.

High approval of a new system of springs for automobile use has been given by the Technical Committee of the Long Island Automobile Club. The system is the invention of Charles A. Lieb, and patents have been applied for to determine whether or not the principle is new. In its report the committee says:

"As you will note, these springs are what might be called 'quarter elliptic' are laminated. They are attached to the frame rigidly with their thick or butt ends at such an angle that the axle moves in an arc approximating an angle of forty-five degrees with the frame. In other words, if one standing on the footboard jumps up and down the wheels will move along the ground to and fro about as much as the frame moves up and down.

"Thus in meeting an obstruction the wheel will be retarded to a certain extent in relation to the frame, thereby permitting the latter to continue its motion in practically a horizontal line. descending from such an obstruction or in coming to a depression the wheel will advance or travel ahead of the frame, with the same result.

"On the other hand, with the present spring system the entire road variation must be taken up by the springs at right angles to the line of motion of the frame. This, of course, is only submitted as theory, and it is not claimed that these new springs will enable a car fitted with them to ride just as smooth on a rough road as on a good smooth one.

"The application of such springs," the report continues, "will certainly necessitate quite a few changes in the steering mechanism, the brakes in the shaft or chain drive, etc., but since our subject is springs we shall not speak of any complications which may arise."

THE DAY'S WORK OF A MOTORBUS.

In its report the committee on cabs and omnibuses says that as many as 25 per cent. of motor omnibuses are in garages undergoing adjustment or repair on any one day. The average daily journey of each vehicle is from 100 to 120 miles; with 75 per cent. of them running, therefore, the average total daily distance is about 47,000 miles. That is, in spite of the infancy of this traffic and the present high percentage of disabled vehicles, the total mileage per annum of motor omnibuses in London is already nearly 17,000,000.

Dauley & Rogers succeed S. R. Radkey in the vehicle repairing business at Austin, Tex.

CHAINS HURT TIRES RATHER THAN ROADS.

Conclusion of English Engineer Who Has Experimented on Private Roads Abroad.

Henry Edmunds, of London, a member of the Institute of Civil Engineers and of the Institute of Electrical Engineers, now visiting in New York City, has given the subject of road injury by chains on automobile tires much thought in the last few years. Mr. Edmunds has been an automobilist for many years, during which time he has watched the effect of automobiles on his private roads leading from the highway to and from his house. Chains have been used for a longer time abroad than in this country, and, in fact, in some places abroad they are required by law.

Mr. Edmunds has been a user for the last six years and has found that the drives on his grounds have not been affected in any particular by their use. It is his contention that chains do not injure road surfaces because any action of the chain is on the tire—in other words, any movement is a reaction that comes on the yielding tire.

He contends that if a road was cross stretched with chains and any number of cars driven over the chains the tires along would suffer. The traction effort is the tire on the chains, not the chains on the road. Coming back to practice, Mr. Edmunds has found that while chains have not had any influence in unmaking his drives, tires with fixed non-skids, such as studs, did tear up the surface, and for that reason were abandoned and only tire chains used in bad weather.

ILLINOIS BILL TO LIMIT GEAR RATIO.

Legislator Would Make It Impossible to Attain a Greater Speed Than Is Legal.

In the production of measures at which motorists will look askance, the present session of the Illinois legislature has been rather barren thus far, according to the C. A. C. Journal. With the exception of one bill designed to prevent exceeding a speed of twenty miles an hour, by limiting the gear ratio, no hostile measure has been introduced at Springfield.

This bill, drafted by Representative Robinson, makes it a misdemeanor to drive a motor car or taxicab which is so geared as to make possible a greater speed than the maximum permitted by law. Some amusement has been occasioned by the fact that, apparently owing to an error in drawing up the text of the measure qualifying clauses were so omitted as to make the bill declare is to be a misdemeanor to drive any car under any circumstances anywhere within the State.

The city of Chicago strongly desires to secure the enactment of a law permitting the city to examine all automobile drivers. In certain quarters there is talk of presenting a bill requiring the use of transparent, illuminated registration numbers at night. Other proposed measures are aimed to nullify practically all of the features of the present law which, in the opinion of automobilists, have proven most satisfactory.

The board of managers of the Chicago Automobile Club is giving the situation careful attention. C. A. McDonald, legal counsel of the club, has been requested to report upon every measure presented which in any way affects the interests of motorists, whether adversely or otherwise. Such measures as are deemed to be undesirable will be vigilantly fought.

A. C. A. TO BUILD AGAIN.

Announcement is made by the Automobile Club of America that it has completed the purchase of three lots in West Fifty-fifth street, on which a large addition to the club house will be built at a cost of $400,000. More than two hundred members of the organization are at present on the garage waiting list, and the proposed addition will enable the club to keep pace with storage wants.

Digitized by Google

Tires and Accessories

THE GREATER TIRE TROUBLES.

Some of the Peculiar Workings of the Law in Patent Cases—Bill Pending to Rectify.

There are other tire troubles than those which take tires to the repair shop. Some of these are dealt with in detail elsewhere in this issue. Take the matter of patents. A patents a tire and B makes the tire and C buys and uses it. Somebody goes into court with a disputed question regarding the patent, and neither A, B nor C knows "where he is at" until—not one decision, but—many decisions have been rendered. Didn't the Dunlop company establish the validity of their patent in the British house of lords, the final court of appeals in that country? Yet in one year thereafter the Dunlop company were a party to not less than 162 legal actions in respect of alleged infringements. On the day of its expiration the company gleefully burned the troublesome patent, their chairman declaring his pleasure at the end of the troubles it had caused, since which time they have prospered without so-called patent "protection." But the Dunlop Tire Company were not the only people concerned. The hotly contested litigation over their tire is recognized as having led to the rewriting of British patent law, on account of the many new points raised by eminent opposing counsel in the suits referred to.

No less has the noiseless, smooth running, resilient rubber tire affected patent litigation in America, though in a different way. At least there is pending at Washington a bill, likely to be passed, to reform the practice in the courts having jurisdiction in patent cases. To relieve the United States supreme court of the interminable mass of litigation over patents and some other things, courts of appeals were established in different parts of the country for reviewing cases in which the inferior federal courts had original jurisdiction. In other classes of litigation the new system has worked satisfactorily, but not in the matter of patents.

In the case of an American tire which attained popularity the owners of the patent brought action against alleged infringers in the federal courts of first instance in more than one "circuit," and with varying results. The patent would be declared valid by the court of appeals of one circuit and not in another. It would appear that now anyone can manufacture the tire in a circuit where the patent was held invalid and send his goods into all of the other circuits. Even if the United States supreme court should take up the case and declare the patent valid, an infringer who won in a single circuit where the patent was declared invalid may still send his goods all over the United States as if he were a licensee under the patent. As we have said, the localized federal courts have worked successfully otherwise, as usually cases come before them involving questions between two individuals or corporations with purely local interests. But patent rights extend all over the country, with the continual possibility of such trouble as has been pointed out in the case of a certain tire, and it appears that a special Court of Patent Appeals, with jurisdiction throughout the United States, is to be the result.

But patent troubles do not end the list. The importer at New York of an automobile and of four unmounted tires of the proper size for it protested against paying duties on the tires as "automobile parts" on the ground that they were "manufactures of india-rubber," on which the tariff is lower. (1) The port collector insisted that the whole importation constituted one complete automobile, and was dutiable as such. (2) The customs appraisers, appealed to, supported the collector. (3) The local federal court took a different view. (4) The court of appeals for such cases provided reversed the lower court, one judge of the three dissenting.

For the time being it is law that whoever imports an untired automobile, but in the same invoice receives four tires adapted to that automobile, must pay duty on one completed machine, even though the whole had never been assembled before shipment. This is law at New York, at least, but suppose the importation should be at Boston or Savannah, or San Francisco, then there would have to be new decisions; they are in different federal court jurisdictions. Of course, the matter might be carried to the United States supreme court, whose jurisdiction would apply alike all over the land, but this is only prolonging trouble.

It will not be disputed, we believe, that there are serious tire troubles beyond punctures and blow-outs.—India Rubber World.

SPOKELESS, PUNCTURE-PROOF, NON-JOLTING MOTOR WHEELS.

The central idea of a motor-car wheel invented by Mr. Van Rijm, of Singapore, and patented in the principal European countries, is to have a wheel in the form of a solid disk, manufactured in one entire piece, and wholly of rubber. Rubber which is soft enough to give an easy, pneumatic-like tread would be unsuitable for the body of the wheel. This is obviated by having a hub vulcanized until it rings to the hammer almost like a piece of iron, and this hardness is gradually diminished from the center outward until three to four inches from the wearing surface, where it becomes so soft that it yields to a gentle pressure of the fingers. It is much softer than the rubber of an ordinary solid tire, because the latter must be hard enough to keep its place in a rim when subjected to the strain of side pull or slip. The all-rubber wheel has no rims, and therefore can be made as soft as desired.

A pair of these all-rubber wheels has been fitted to a heavy car and used freely all over the island of Singapore for some weeks. It is said to be impossible to distinguish the motion from that of high-grade pneumatic tires. With such wheels it is impossible to get even a sharp jolt which a sudden descent on the metal rims occasionally produces over humpy roads

The wheels seem less a dust raiser, and has none of that suction which makes the pneumatic the despair of road surveyors. Its great advantage is that it is unbreakable, and there can be no punctures. There are no spokes to snap or shake loose. Should the running surface become worn it can easily be restored by vulcanization in the ordinary manner. Any non-skidding device may be attached to the wheel if desired.

TIRE IMPORT DUTY DECISION.

A decision has been rendered in the federal courts regarding the rate at which automobile tires should be dutiable when imported into United States in connection with, but not mounted upon, automobiles. The Auto Import Co. and other importers at New York protested two years ago against the payment of duty on certain automobiles as an entirety at 45 per cent. ad valorem, on the ground that the tires, not being mounted, should be admitted as manufactures of india-rubber, on which the rate is only 30 per cent. The collector at New York was upheld by the board of United States general appraisers whose decision the Auto Import Co. and Archer & Co. asked to have reviewed by the United States circuit court for the southern district of New York. Here the decision was adverse to the government.

Digitized by Google

The matter was carried next to the United States circuit court of appeals, second circuit, where a decision has been rendered, reversing that of the circuit court and sustaining the collector of customs and the general appraisers. The gist of the latest decision is: When an incomplete automobile car and the four tires necessary to put it in running order are imported together, in the same vessel, by the same importer, and entered at the same time, the parts are dutiable as a whole, though before the machine is ever used other tires may be substituted. The latest decision is dissented from by one of the judges, Noyes, who says: "I cannot agree that rubber tires should be assessed as manufactures of metal merely because they are imported in a crate with an automobile upon the wheels of which they never have been, and it is wholly problematical whether they ever will be, placed."

A CELEBRATED CASE.

The end of a long drawn out legal battle between the Consolidated Rubber Tire Company and the Goodyear Tire & Rubber Co., of Akron, Ohio, was recorded on March 8, when the supreme court of the United States denied a petition certiorari (a writ for review) in the Grant patents case. The Rubber Tire Wheel Co., now included in the Consolidated Rubber Tire Co., began suit against the Goodyear Tire & Rubber Company for infringement of their Grant patent on solid rubber tires in the spring of 1899, in the United States circuit court at Cleveland, Ohio. In October, 1901, Judge Wing rendered a decision adverse to the Goodyear Company. This case was appealed to the United States circuit court of appeals.

On May 7, 1902, the court, consisting of Judges Day, Lurton and Severence, rendered a decision reversing the lower court and finding in favor of the plaintiff. An application for a hearing to the supreme court of the United States was then made, but the petition was denied.

About two years ago the Consolidated Company obtained a favorable decision against another rubber tire manufacturer in the New York district, which resulted in conflicting decisions in courts of equal jurisdiction. Taking advantage of this situation, the Consolidated Company again endeavored to have the Goodyear case reviewed by the supreme court, but the petition was denied.

This leaves the Goodyear Tire & Rubber Company free to sell solid rubber carriage tires in any portion of the United States or its territories; but through a peculiar construction of the law the outcome of the Goodyear case in no wise effects other rubber tire manufacturers or their customers, who are still assailable by the Consolidated Company.

The Kempshall non-skid tires made in England will be handled in the United States by Cryder & Co., 585 Park avenue, New York, who have been made sole agents.

Ralph P. Dawse succeeds Chas. A. Monson as manager of the Detroit branch of the G. & J. Tire Co.

John E. Thropp's Sons Co., Trenton, N. J., announce that they are exclusive licenses under the Peter E. Thropp patent No. 822,561, dated June 5, 1906, for the manufacture of molds for curing tires in open steam. Five rubber companies have already taken licenses for the manufacture of tires by the use of these molds, and other companies may obtain licenses under like conditions. It is intimated that infringers of the patent referred to will be prosecuted."

Because of the open winter and the depression in the automobile business in 1908, the Akron rubber trade is anticipating an unusually early motoring season this year. They are making preparations accordingly, and all attention is now turned toward the distributing agencies and the branch stores of the various tire making companies. There has been an annual extension of selling facilities for the present season, and a large number of new branches and agencies have been established.

A petition in bankruptcy has been filed against Pneu L'Electric Co., dealers in automobile tires, at No. 238 West 108th street, New York, and Charles L. Cohn has been appointed receiver. The company was incorporated under the laws of New York July 26, 1907, with an authorized capital of $200,000.

The Empire Automobile Tire Co., Trenton, N. J., are erecting a large addition to their plant—a duplication of the building put up a year ago.

TOURING COACH.

Illustrated on opposite page.

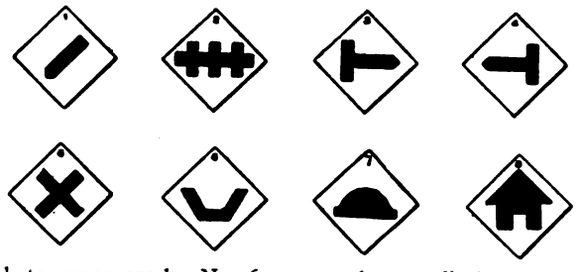
For an exclusive and independent means of conveyance there is nothing that quite fills such a unique place as the Welch touring coach, which is fitted up with every modern convenience. The car is of the six cylinder type with a wheel base of 138 in. and 5½ x 36 in. tires; the motors being capable of developing 75 horsepower. It is in reality the only type of car that can be truly termed a touring coach. It contains sleeping, cooking and dining accommodations for five. Has ice box, storage for provisions and clothing, lavatory with hot and cold water and both screens and glass in windows. Will seat comfortably nine people. This car is the product of the Welch Motor Car Co., Detroit, Mich., and is indeed a twentieth century novelty.

ROAD SIGNALS.

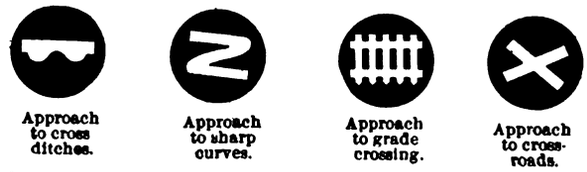
Caution Symbols Adopted by the Motor League—International Signals for the Continent.

Following are the American Motor League "Caution Signs." The background and posts are white, the symbols black.

No. 1 indicates approach to a steep descent; No. 2, approach to a railroad crossing; No. 3, approach to a branch road (to right); No. 4, approach to a branch road (to left); No. 5, approach to cross roads; No. 6, approach to a ditch or abrupt depression in the road; No. 7, approach to a hummock or "thank you, ma'am;" No. 8, approach to a city, village, or other collection of inhabited dwellings; No. 9 is a general caution signal indicating the proximity of any danger or obstruction not scheduled above, or any other condition requiring caution. No. 9 (not shown in cut) is a plain white sign and can be improvised in emergent cases by using a sheet of white cloth fastened upon a board of proper shape. Each sign is placed at a distance of not less than 200 nor more than 300 yards from the point to which it refers.



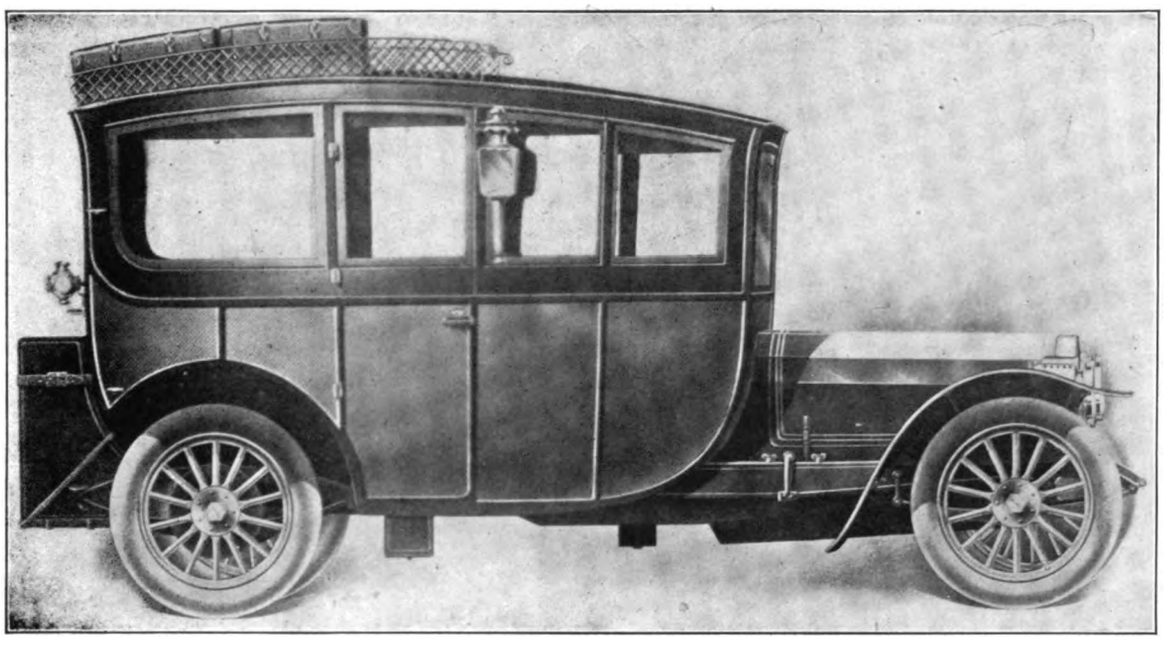
One of the results of the international conference of automobile clubs, held in Germany in December, 1908, was to advise and recommend the erection of danger signals on all public highways by means of conventional figures conveying their own meaning, regardless of the language of the explanatory text. As the European touring and motor clubs are very active in work of this kind, it will not be long before the Continent will be fairly well provided with signals of the following types:



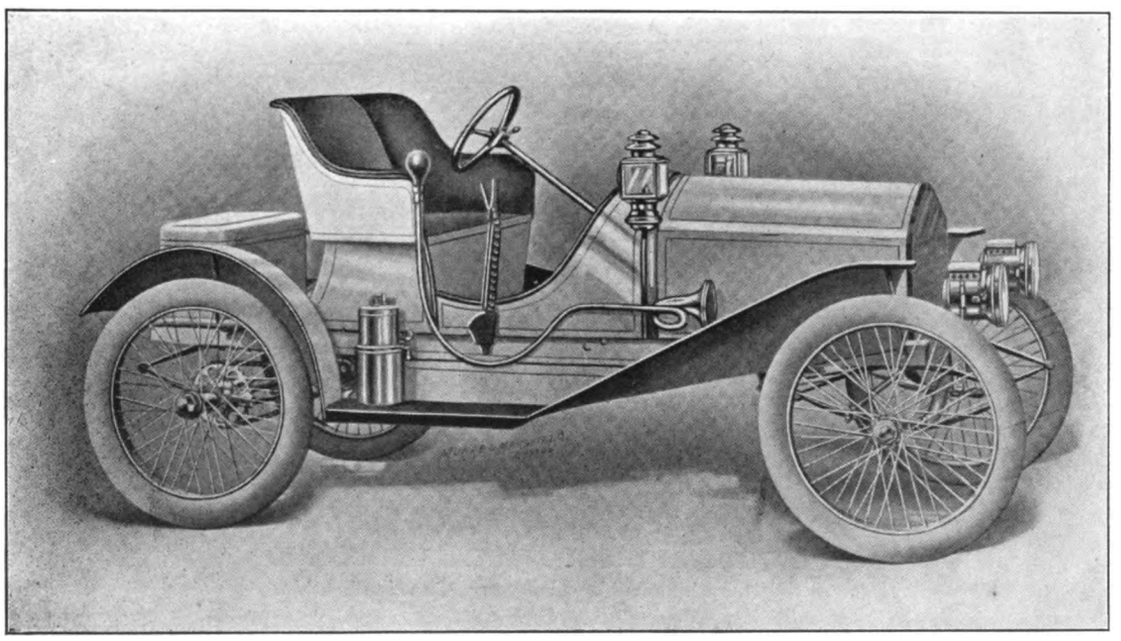
Approach to cross ditches. Approach to sharp curves. Approach to grade crossing. Approach to cross-roads.

Digitized by Google

Illustrated Automobile Section, April, 1909

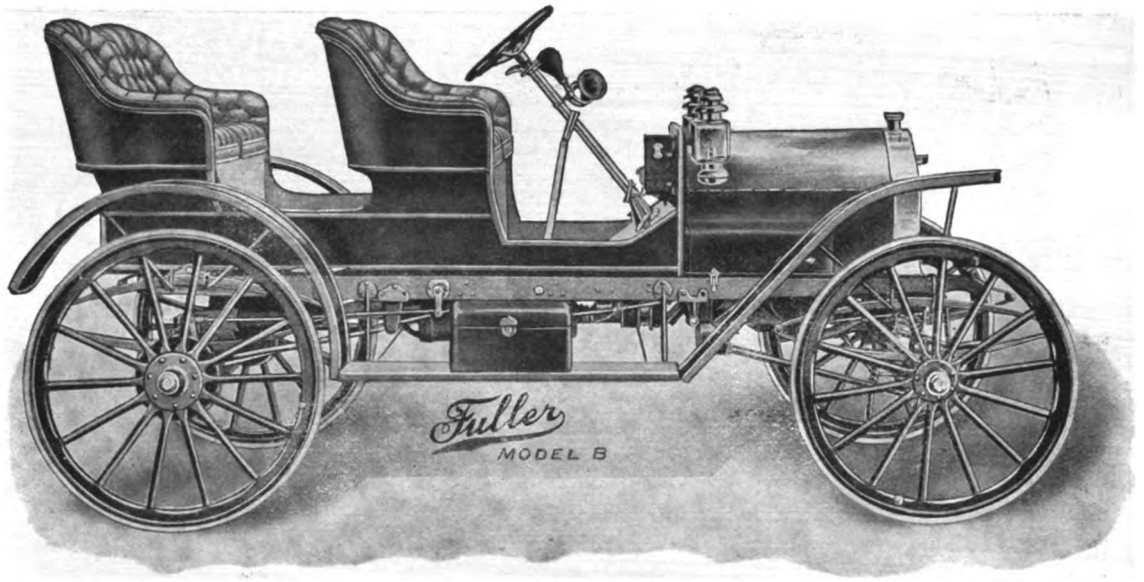


NEW AND NOVEL TOURING CAR.
Built by Welch Motor Car Co., Detroit, Mich.
Described on opposite page.

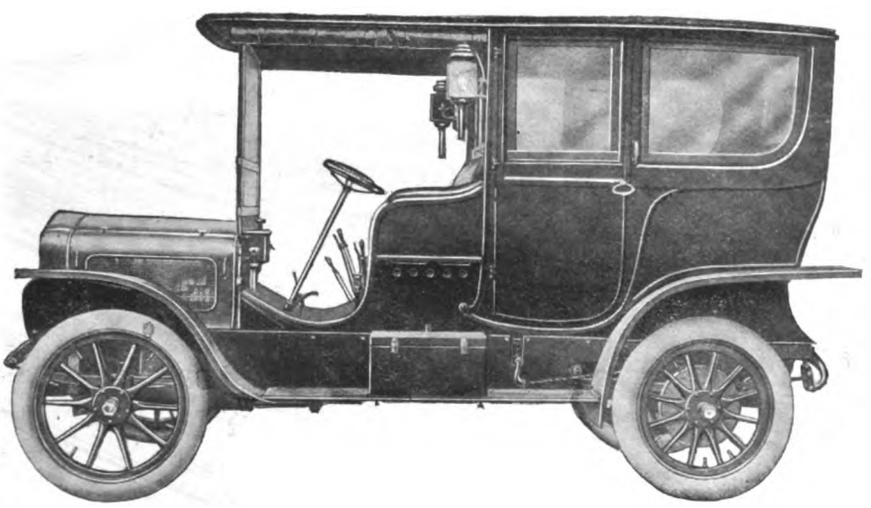


LIGHT WEIGHT RUNABOUT CAR.
Built by the Metz Plan Car Co., Waltham, Mass.

Digitized by Google

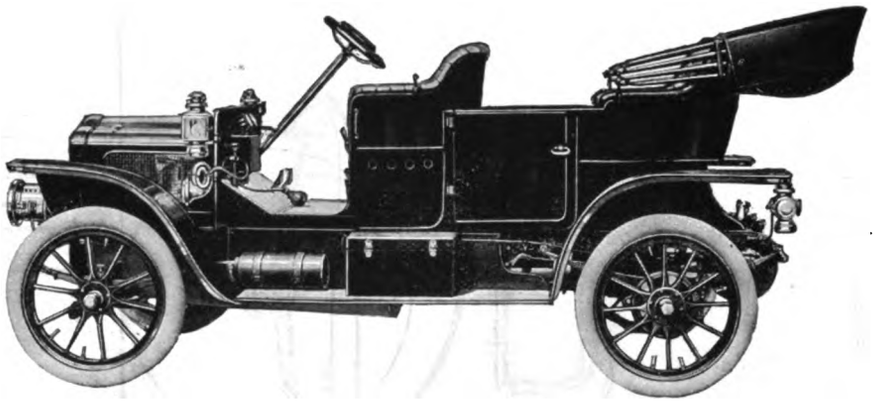


FOUR-PASSENGER AUTO WITH SOLID TIRES.
Built by Fuller Buggy Co., Jackson, Mich.

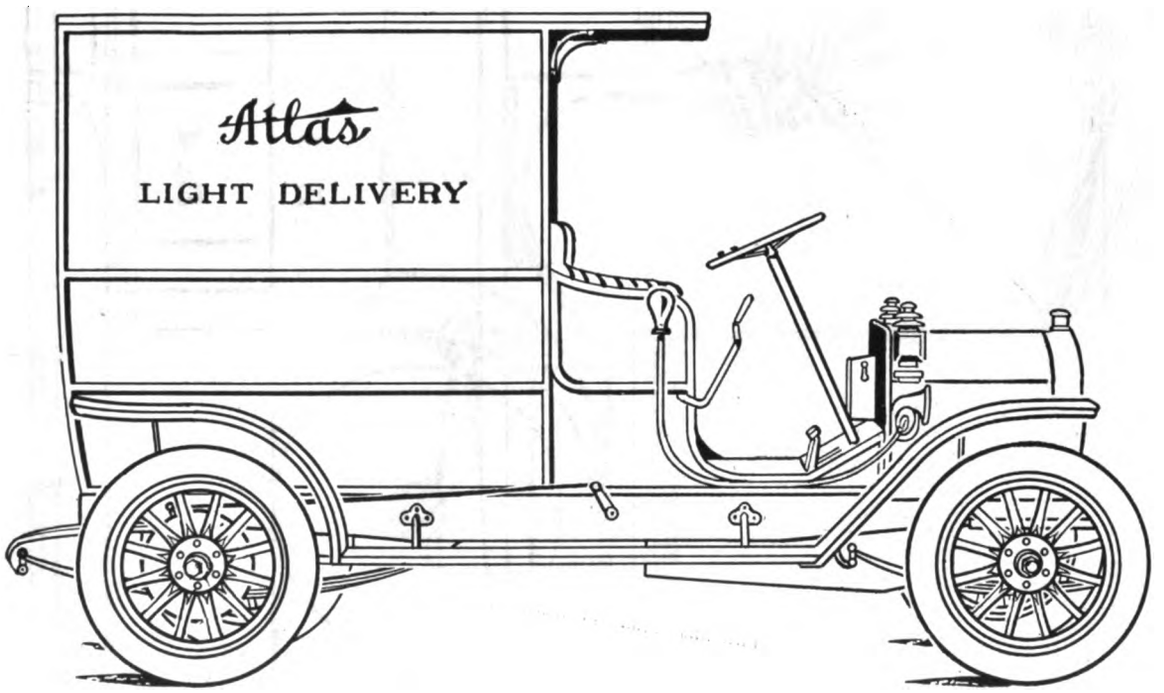


FORTY HORSEPOWER LIMOUSINE.
Built by The White Company, Cleveland, Ohio.

Digitized by Google

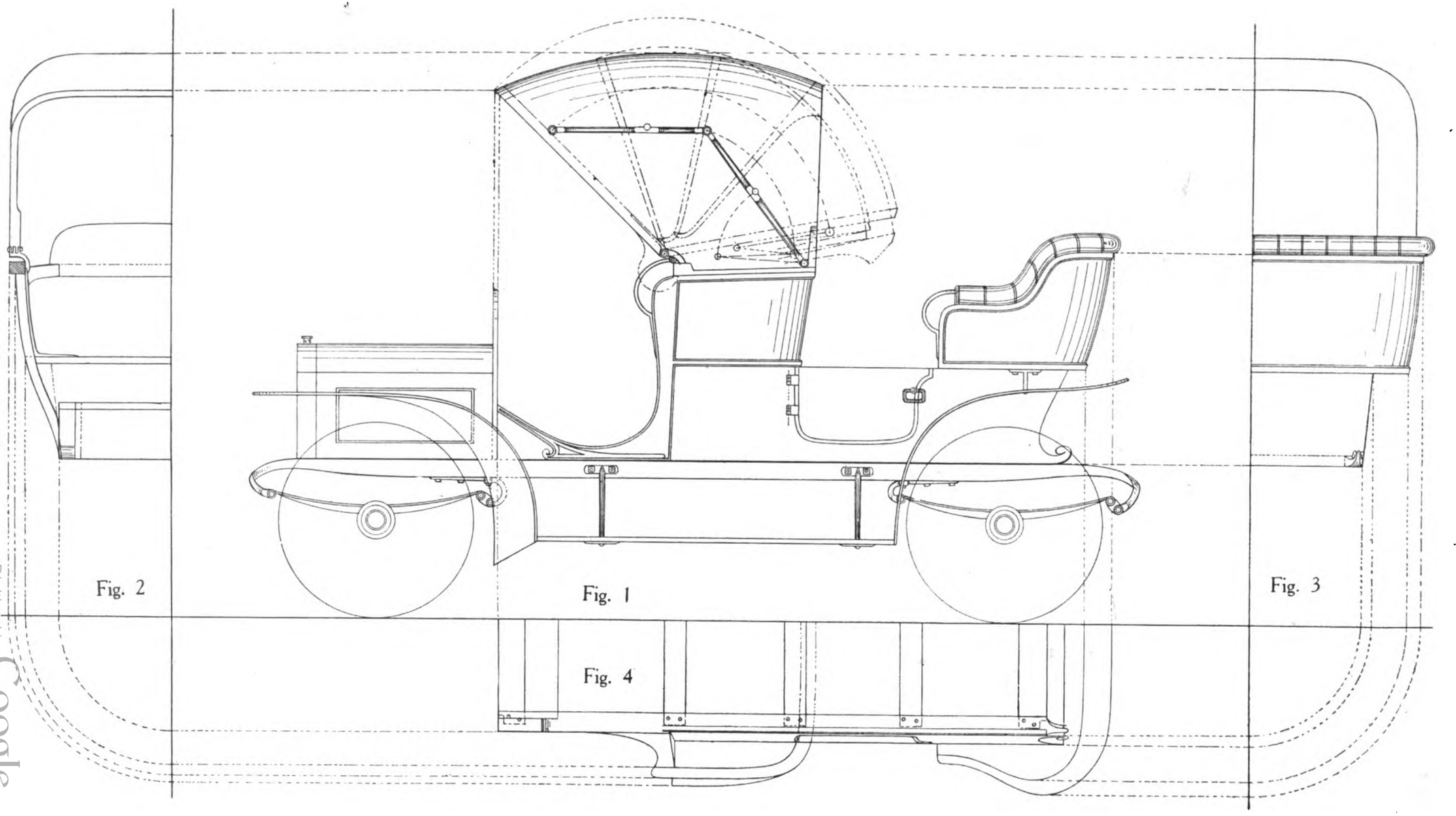


TWENTY HORSEPOWER CAR WITH CAPE TOP.
Built by The White Co., Cleveland, Ohio.



LIGHT DELIVERY CAR—Capacity, 1,200 pounds.
Built by Atlas Motor Car Co., Springfield, Mass.

Digitized by Google



WORKING DRAFT OF MAIL PHAETON SIDE ENTRANCE CAR.

Described on opposite page.

Digitized by Google

Body Construction and Finish

WORKING DRAFT OF MAIL PHAETON SIDE ENTRANCE CAR.

Drawing on opposite page.

A trade journal worthy of the name of the industry it represents will always take up the position of a sentinel, and keep the frontiersman of the trade, who are its subscribers, well posted on the progress and events passing along the horizon within its ken.

The Hub has held this important position for half a century, and as each issue appears it contains some features in its column matter to justify the appellation of sentinel to the trades it represents.

In support of this claim, we give here an original design of a mail phaeton side entrance motor car, and it will be seen that the draft is a fine adaptation of the mail phaeton to motor body design. The full strength of this old and aristocratic type of carriage adds prestige to its new role of motor car, and this is the element that must permeate the design of motor body construction, for "the old order changeth, giving life to the new." The design provides almost all the protection obtainable in a landaulette without any of its intricate mechanism, while the style is exclusive and, from this point of vantage, enters the lists with some force as to public recognition. But the design in its exclusiveness appeals to the aristocrat motorist more than to those who cannot see "sermons in stones," nor hear "laughter in the rippling brooks."

The body is made of a length to allow of a side entrance, the door width being enhanced through being carried up to the front of the back seat. The line of the door on its shutting side harmonizes with the body's curvature. The boot side of the body is made of ⅞-in. stuff, and pillared on each side of the door and edge plated. The boot side can be framed and panelled over, but the pin holes of the panelling show through the painting in time, and for this reason a solid side is preferable.

The hind boot is panelled as shown by chain line in the elevation. The seat is framed in the Roi-de-Bilge style, as explained in the plan, Fig. 4. The panel is of metal, or can be built up and covered over with leather in the same way that a brougham roof and quarters are done, and the moulding planted on. The mouding in such cases is generally of metal and fixed with fine screws, and the heads dressed off level. An angle being on the seat, the moulding must be covered in the corners when in the straight, so that when bent round to the curve of the seat corner it will lie flat to the angle of the side. These seats can be had from timber benders in solid boarding.

The front seat is framed in the same way as an ordinary mail phaeton body is done, the top rail and seat being panel grooved for the waist panel, which is of mahogany.

In getting this panel out, it should be dressed to an uniform thickness throughout; that is, to the groove of the gigger thickness, otherwise when the panel is being bent round to the corner curves it will crack through unequal pressure, because the thick part will be in greater resistance, and therefore throw a greater stress on the thin or weaker part of the panel, and so cause it to break.

In putting on this panel, the most correct thing to do is to make a pattern of floor cloth, or similar material, in one piece, and fit it to the gigger grooves. Too much care cannot be exercised in fitting the pattern. It should lay perfectly flat and without twist in any part, otherwise the panel will in all likelihood break in putting in. When the pattern is fitted correctly, the panel should be marked off from it exactly. In bending, hot water is the best helping agent to saturate the fibres of the panel with; the water deadens and for the time pulps the wood to a pliant will, in which state it is more easily put in than if canvassed on the corner parts, as some body makers do, which plan causes a greater resistance, though of course the fibers of the panel are strengthened with the canvass, but strength is not so much required in the operation as pliancy, which hot water gives, hence it is the best coaxing agent for the operation.

A mail phaeton seat panel can be shown in shape geometrically on a flat surface, but it cannot be got out to fit a framing correctly in this way, because of the conical twists on the panels bending, pulling it away from one part and binding it in another. The geometrical laying out of the shape of the panel in the flat serves only to show the uses of the science in coach body making, which is not like a tinsmiths or metal works work, which are exact geometrical figures in construction, while the metal itself is drawn to the accessory shape a vessel is worked to. Coach body making is not an exact science in the minuteness of its working to constructional shape, but it is most necessary to understand the science of geometry and applied mechanics to build a soundly constructed carriage body. The elevation outline is a straight surface; heights in elevation can be developed, such as the front pillars of a Victoria or a mail phaeton, but the correct size of a panel to fit the front seat of a mail phaeton cannot be acurately defined to drop into the curves and grooves, and fit.

The hood is fitted with four bow slats, as an ordinary horse-drawn mail phaeton is done, and strengthened with double side points. The head with the joints are developed to position when the hood is down; the centers are shown theoretically, so that they can be forged and fitted up correctly, which is an important practical lesson in coach smithing.

The sizes of body are: Length of body on bottomside, 7 ft.; depth of boot side 114½ in.; width of front seat, 22 in.; depth of quarter in front over seat and top rail, 13¾ in.; behind, 14½ in.; length on top rail, 21½ in.; length of bracket bottomside, 19½ in.; length of bracket, 11 in.; width of back seat, 22½ in.; depth at front, 10 in.; at back of same, 18 in.; width of door at top, 20½ in.; depth of door, 11½ in.; width of body on bottom, 34 in.; on top of boot side, 37 in.; width over center of seat behind, 4 ft.; at front, 40 in.; wdth across front seat over pillars, 45 in.; on top, 48 in.; width across head, 50 in.; depth of head from seat to square line, 42 in.; rise on head 5 in.; length of head sideways, 4 ft. 2 in.

COATS OF PAINT REQUIRED.

In speaking of automobile body painting, Emerson Brooks, of J. M. Quinby & Co., says: "There is more exaggeration about the number of coats of paint and varnish put on an automobile body than about any other feature of the car construction. The time allowance betwen the coats and the care exercised in putting them on are of vastly more importance than the number of coats, and if too many are given the surface is likely to crack and flake off."

"You occasionally hear about an automobile body having twenty-five to thirty coats of paint and varnish. This is ridiculous. An aluminum body requires eight coats and a wood body fourteen. The latter should receive two coats of lead prime, six coats of filler, a guide coat, one or two color coats and four of varnish. An aluminum body does not require the filler or guide coats and instead of the lead prime a special preparation is used for the foundation and then the color and varnish coats are added."

Digitized by Google

THE SPARE WHEEL.

The general introduction of the spare wheel for automobiles is giving motor vehicle repairmen considerable extra work and money. The spare wheel, which is sometimes called the emergency wheel, is a valuable factor in motoring. This wheel is also called by some the additional wheel; while out through the country various other terms are applied to it, although it is simply the extra wheel which many tourists are now carrying

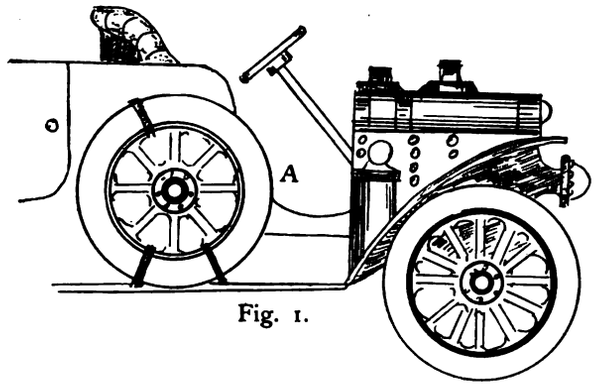


Fig. 1.

alongside of the car, on top of the car, in front or rear or trailing behind.

In some instances spare wheels break lose and are dragged for some distance. The extra wheel which has been planted squarely and firmly in the proper place with the right balance and correct strapping by the manufacturers of the machine will not give much bother. The automobile fixers, the agents, the dealers, the owners and all hands often take a turn of securing an extra wheel to the car. Sometimes a party drives up to the dealer, buys the additional wheel, and with a few straps and cords makes fast. But before he has traveled far the wheel breaks free and trouble begins. No one has any idea of the wrecking capacity of a spare wheel which has broken loose. One cannot imagine how quickly one of these extra wheels will break through special fastenings and goes skidding off by itself.

Even when experienced fixers make the joints, something

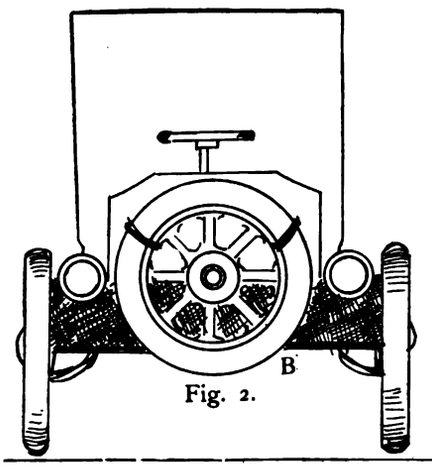


Fig. 2.

may be wrong and the wheel goes overboard just when you are in a hurry. Now, then, the original car with its original wheel for emergency purposes is, as a rule, quite well combined and you need have no concern. But when wheels are thrown at cars you had better beware. Of course you use straps and ropes, and perhaps chains. You expend $40 for a wheel and fasten it in place. If scientific principles are used in making the bracing and jointing, the wheel may stay at A, Fig. 1, or wherever it is put. If you have been at all lacking in the adjustment, you may expect to see the extra wheel dragging beside the car or bumping on the ties, as it were.

Some prefer to have the extra wheel on the forward end of the machine, as at B, Fig. 2. This, no doubt, is to give a chance to watch the wheel. With the eye on the wheel, weak points can be detected in the connections and stop in time to make repairs if anything gives signs of giving out. On the other hand, the front is a bad place to drop a wheel from. To drop a wheel

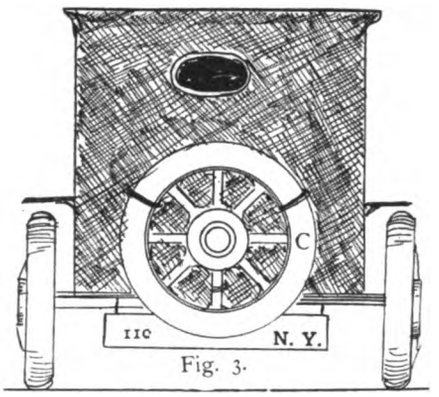


Fig. 3.

behind, you may lose it, unless someone behind shouts to you. But the wheel will not trip up your car. It may trip up the car in the rear. If the wheel is on the side it may drop under one of the rear wheels and then the machine turns turtle.

Fig. 3 shows the wheel on the rear, and Fig. 4 on top at D. Weight is added by placing the wheel on top, and the automobile may be thrown out of balance when making a curve and turn over. It is quite a problem to the repairmen to comply to the requirements of many of the people who appear on the landscape with an extra wheel carried between their knees on the front seat.

The seller has forewarned the buyers to go to a shop where there is a machinist with tools to attach the wheel. Unfortunately the average motorist assumes that the wheel can be adjusted while he waits. Not so. The car should be run into

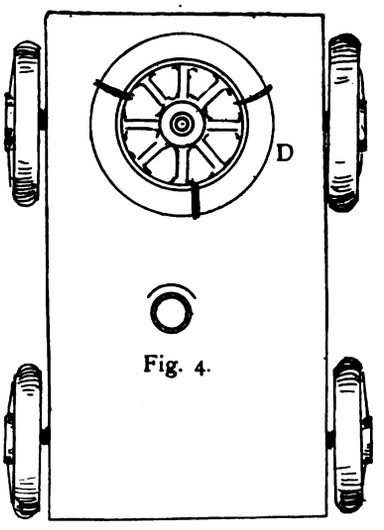


Fig. 4.

the shop and left there until next day. Give the repairmen time enough to do the work right. He will not depend upon wires for strapping and cut your tire. He will not rely upon straps altogether. He will proceed to shape a metal base first. This metal base will receive the lower half of the wheel. This makes a good seat for the wheel. Then in order to retain the wheel in place in the seat, the seat is riveted in position at a convenient point along the side of the car, about as in Fig. 1. Then a series of straps is used to secure the wheel firmly. In making of the original car, a recess is often made in the running or foot board, and this helps support the wheel. Some men bolt the hub through with a shaft entering the bore and connecting with a bracket on the car body. Others proceed to wind the spokes and connect with staples in the car body.

Some autoists fix the wheel so securely that they would lose

Digitized by Google

much time in getting the wheel off in case of need. The wheel should be convenient to remove. Another thing, the tire of the spare wheel should be inspected and tested at regular intervals.

ARRANGEMENTS FOR AUTOMOBILE WEEK.

Lively Interest Along Broadway in Renewal of the Celebration That Scored Big Success Last Year.

Interest in the second annual automobile carnival has been greatly stimulated among New York dealers by the offer of cash prizes for the best decorations among cars in the parade of May 1, with which the carnival will end for the public. Along "Automobile Row" dealers are busy these days devising methods of making their automobiles attractive to the judges.

The most recent decision with regard to the big week was to again elect a king and queen to reign over their thousands of subjects during the six days when the automobile will be the most important thing on Broadway. More than two million votes were cast for the same positions in support of the many candidates last year, and it is probable that there will be a large number of bidders for royal honors for the first renewal of the event.

The method of electing the rulers for carnival week will be by the coupons which are now running in the New York daily papers. The funds raised by the sale of coupons will go to defray the expenses of the carnival.

The Automobile Club of America has again extended its hospitality to the trade and on Saturday evening, May 1, the end of carnival week, will throw open its doors and provide an entertainment and smoker to the New York automobile trade. On this occasion all of the various prizes and trophies won during the week will be awarded to the winning contestants.

This includes the cash prizes to the winners in the decorated section of the carnival parade in the form of certified checks. As the parade takes place Saturday afternoon, a notice will be displayed in the windows at carnival headquarters, at No. 1,789 Broadway, giving the names of the prize winners, so that the fortunate ones may be on hand at the Automobile Club in the evening to receive the money awards. There will also be given out the cups and trophies won in the carnival hill climb, endurance run, track meet and straightaway races.

Carnival headquarters have been formally opened by the committee. Entry blanks for the parade and the various contests will be kept on file at headquarters for all applicants. This will also be the headquarters for the receipt and issuing of the coupon votes for king and queen.

Colonel K. C. Pardee, chairman of the Carnival Hill Climb Committee, announces that the hill climb classifications and rules will be similar, with one or two slight exceptions, to those of a year ago. He has already received a number of entires, pending the formal issuance of the blanks, which will be out about the middle of the week.

It will be possible to announce in a short time the arrangements for the various contracts of carnival week. The hill climb, it is expected, will occur on the Fort George hill and the track meet at Morris Park. The committee in charge of the endurance run is busy preparing a route, and something out of the ordinary is promised.

For a long time automobile construction was hampered with the lack of specific tools, or tools specifically adapted to automobile construction. Tools for other purposes were used and adopted as far as skill could adopt them, but there were many unnecessary obstacles encountered. Within the past year, and notably within the past few months, mechanics have been busy introducing special tools for shop work, and tool makers equipped for the production of original tools are quite busy in filling orders for this class of work. A great deal remains to be done in this direction.

USES OF GASOLINE AND ELECTRIC CARS.

Gasoline and electric cars do not compete any more than business and evening dress do. Each is designed for a different purpose, and, far from being rivals, they are for the most part allies. There are a lot of people who do not understand the essential difference between the two classes of vehicles, nor do they understand the qualities and the adaptabilities of each.

The electric is the city car par excellence, says Hayden Eames. As a substitute for the touring car it is a lamentable failure. Its sphere is bounded by the area of the paved streets. Nor is the too common idea that the scope of the electric is confined to women's use correct. On the contrary, while it is the only type of motor vehicle a woman should drive, because of its simplicity, its lack of mechanical complications and, above all, its cleanliness, yet its larger field is in the every-day service of the business man.

Nowhere, perhaps, are the distinctions between the gasoline and electric car more clearly drawn than in Cleveland. Cleveland owns more electrics than St. Louis, a city many times as large; owns more of every type of car, gasoline, steam and electric.

There are more than two thousand electric pleasure vehicles among the five thousand owned here; a record, I think. Now, nine-tenths of the men who own those two thousand electrics also own gasoline cars—usually high powered touring machines.

I think it could be laid down as an axiom that an electric car is an economy to any man owning a touring car worth $3,000 or more. Such a vehicle is quite as unsuited to city work as the electric is for country touring. To drive a car weighing one and one-half tons through congested streets, stopping, starting, slacking pace and accelerating in order to weave a way through the traffic; shifting gears once or twice in every block length, is to subject brakes, clutch, gears and tires to the most severe stresses —and it shows up in the annual repair and replacement bills in a manner that is appalling.

Total it up to the end of a twelvemonth. It will be found that such a car has deteriorated fifty per cent. in the year unless the chauffeur has been more careful than the average. Then it will be realized that a $1,500 electric would have paid for itself in the year in actual economy, to say nothing of its many other advantages in city service.

Consider that you have supplemented your garage equipment with a serviceable electric and a home charging outfit. Ten per cent. will then more than cover the annual depreciation of the good gasoline car when used for the service it is desired to perform—country driving. Five per cent. will cover it in the case of some cars. The maid or the gardener puts in the plug and starts the recharging process while you are at breakfast or enjoying your morning paper. When you are ready, so also is the car.

The electric is not, or rather should not, be a racer. Seventeen to twenty miles an hour would result in arrest in any well regulated suburb, so that is as fast as you could go in a gasoline car till you reach the heavy traffic. From then on the electric is speedier. Being more flexible in control, it will worm its way through the traffic at a much faster rate than the cumbersome touring car possibly could. This has been demonstrated time and time again in races between electric and gasoline cars in busy streets, where frequent stops were necessary and traffic regulations and the safety of pedestrians had to be regulated.

Few people realize how rapidly rubber is ground off tires on a heavy touring car of long wheel base by the frequent releasing of the clutch, changing of gears, effort of stopping and starting and the still more wicked grinding consequent on turning sharply to avoid or to circumvent street cars and wagons. It is the chief item in the year's maintenance bill. A set of tires that will stand ten thousand miles of touring on average roads will go to pieces in one thousand miles of city work.

Digitized by Google

AUTO INCORPORATIONS.

Chicago—American Mors Company, of Illinois; capital, $25,000; manufacturing and dealing in automobiles. Incorporated by E. W. Pottle and others.

El Paso, Tex.—El Paso Motor Car Company; capital, $10,000; by H. L. Roper and others.

Stapleton, N. Y.—Richmond Taximeter Cab Co.; capital, $5,000; by Maurice Carr and others.

New York—Bainier Motor Co.; capital, $350,000; vehicles; by P. N. Lineburger and others.

Jersey City, N. J.—Dreadnaught Tire Company; capital, $2,000; automobile supplies, etc.; by S. Browne and others.

Saginaw, Mich.—The Marquette Motor Company; capital, $300,000; by W. C. Durant and others.

Chicago—Premier Motor Car Co.; capital, $12,000; by Webb Jay and others.

Chicago—The Monarch Auto Top & Supply Co.; capital, $2,500; manufacturing and selling automobiles, automobile tops and accessories; by O. Yates and others.

Syracuse, N. Y.—Wonder Manufacturing Co.; capital, $40,000; automobiles; by William D. Boyle and others.

Great Falls, Mont.—Northwestern Automobile and Engineering Co.; capital, $25,000; by B. D. Whitten and others.

Edon, O.—The Perfection Non-Skid Climber Co.; capital, $20,000; to manufacture automobile climbers; by F. C. Kaiser and others.

New York—American Auto Supply Co., to manufacture supplies for automobiles; capital, $10,000; by Adolph Diamond, 485 Vermont street, Brooklyn, and others.

Kittery, Me.—Panther Car Co.; capital, $100,000; by H. Mitchell, pres., manufacturing and sale of motors.

Marshalltown, Ia.—Marshall Auto Company; capital, $10,000; by C. A. Wadle and others.

Chicago—American Auto Appliance Co.; capital, $200,000; manufacturing auto appliances; by E. A. Garvey and others.

Rockford, Ill.—Cotta Transmission Company; capital, $40,000; manufacturing and dealing in automobiles and other steel and iron products; by Charles Cotta and others.

New York—Wisley & Everly Co.; building, repairing trucks, wagons, motor cars, etc.; capital, $10,000; by Benjamin Wilsey and others.

New York—Walter H. Stearns Co.; to manufacture cars, carriages, vehicles, boats, motors and engines; capital, $5,000; by Walter H. Stearns and others.

Worthington, Mass.—Worthington Transportation Co., general automobile business; capital, $10,000; by Harry C. Lapham, of Springfield.

Denver, Colo.—Taxicab and Motor Car Co.; capital, $25,000; by A. Morrell and others.

Oak Park, Ill.—Bendix Co.; capital $200,000; to manufacture automobiles; South Dakota corporation; no names given.

Camden, N. J.—The Pittsburg Auto Delivery Co.; object to construct vehicles of every kind; capital, $125,000; by W. A. Petters and others.

New York—Connecticut Motor Vehicle Co.; engines, motors, etc.; capital, $50,000; by C. M. Gilpin and others.

Syracuse, N. Y.- Motor League of America; capital, $100,000; to manufactur motors and engines; by A. A. Schlachter and others.

New York—Kiss Motor Car Co.; horseless vehicles, motors, etc.; capital, $5 000; by F. S. Waldo, 214 West 80th street, and others.

Chicago—Nadall Vansicklen Mfg. Co.; automobile accessories; capital, $50,000; by G. L. Wilkinson and others.

Chicago—Auto Lock Company; capital, $50,000; automobiles; by Robert W. Dunn and others.

Atlanta, Ga.—Armstrong Buggycar Company; capital, $25,000; by A. K. King and others.

Chicago—Premier Motor Car Co., 100 Washington street, to manufacture automobiles; capital, $12,000; by Webb Jay and others.

Birmingham, Ala.—E. E. Enslen and others are incorporating a $250,000 company to manufacture six cylinder automobiles.

Schenectady, N. Y.—The Motor Wagon Co.; capital, $25,000; by Chas. H. Blanchard and others of New York.

Muncie, Ind.—The Interstate Auto Co.; capital, $300,000.

Lancaster, O.—Donkers Motor Co.; capital, $25,000; by John B. Lutz and others.

Pierre, S. D.—The Loomis Motor Car Co.; capital, $500,000.

Milwaukee, Wis.—Milwaukee Motor Truck Co.; capital, $200,000.

Dubuque, Ia.—The Brandel-Waller Co.; capital, $35,000; to manufacture autos, furniture, carriages, etc.

Cincinnati, O.—The Marathon Motor Car Co.; capital, $30,000.

Wessingston Springs, S. D.—The Western Machine & Motor Co ; capital, $25,000.

EXHIBITIONS ON THE INCREASE.

Motor car exhibitions in large cities are on the increase. Already this year a score have been held, attended by over a million people. Preparations are now under way in a score or more of cities for exhibitions later on, to say nothing of innumerable "shows" in smaller cities and towns. It is the ambition of the majority of these interested visitors to some day own an automobile, and their attendance is feeding their ambition. The turn to out-of-town sports and pastimes is a much-to-be commended development in American character. Athletics are taking a wider meaning. No other industry has so many roots in our common human nature as the automobile industry. The car affords a valve or outlet of expression and a gratification of desires which have always existed, but have always been latent. Let the exhibitions go on.

The proposed New York to Seattle endurance run will attract wide attention of all automobile interests, and will be worth its while. Endurance runs are not so interesting as they once were, when construction was not so perfect.

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, five cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

HELP WANTED.

Wanted—A-1 body makers. Royal Tourist Car Co., Cleveland, Ohio.

SITUATIONS WANTED.

Wanted—Position by experienced foreman blacksmith, carriage or automobiles; organizer; honest and reliable. Desires a permanent position with good manufacturer. Reference A-1. Address Box 24, care The Hub, 24 Murray street, New York, N. Y.

Wanted—Situation by all-around carriage trimmer with over thirty years experience in all styles of carriage and automobile trimming. Small shop preferred. Location no object. Address Robt. Joers, 3166 Fifth avenue, Rock Island, Ill.

Wanted—Position by an all-around carriage man with eight years experience as blacksmith foreman, and the last two years general manager of concern building 3,000 vehicles annually. Good at figures. Capable at cost. Best reference furnished if desired. Address "A. M. C.," care The Hub, 24 Murray street, New York City.

Wanted—Position by experienced draftsman in carriage and automobile factory. Eastern location preferred. Best of reference. Address "J. H. M.," care The Hub, 24 Murray street, New York City.

PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 608 F street, Washington, D. C. Established 1883. I make an investigation and report if a patent can be secured and the exact cost. Send for full information. Trade-marks, registered.

Digitized by Google

WHY IS IT?

That every successful builder of Motor Buggies is using

Timken Axles With Roller Bearings

Rear View.

Square Dead Rear View.

Of course there is a good reason, or such concerns as the following wouldn't continue to us them:

Holsman Automobile Co.	Reliable Dayton Motor Car Co.
Schacht Manufacturing Co.	The Bendix Co.
Columbus Buggy Co.	The Chicago Coach and Carriage Co.
International Harvester Co.	W. H. McIntyre Co., etc., etc.

If you are figuring on building Motor Buggies or are already in the field and would like to know why you should use

Timken Roller Bearing Motor Buggy Axles

we will be very glad to furnish you with facts based upon experience that will prove mighty profitable to you.

Timken Roller Bearings are Guaranteed for Two Years

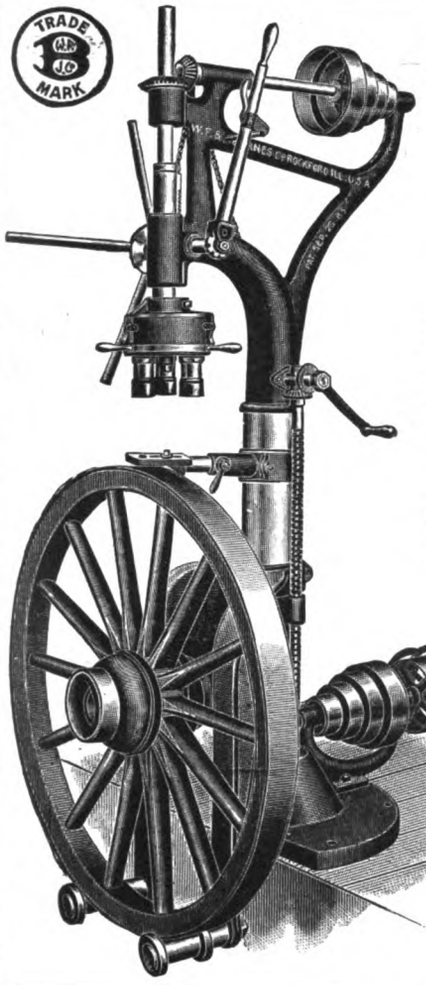
If interested, write for catalogue and prices.

The Timken Roller Bearing Axle Co.

CANTON, OHIO

BRANCHES: 10 E. 31st STREET, NEW YORK
429 WABASH AVENUE, CHICAGO

Digitized by Google



A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

P P P P P P P P P P P P
O O O O O O O O O O O O
R R R **BOLT CLIPPERS** R R R
T T T **EVERETT, MASS., U.S.A.** T T T
E E E E E E E E E E E E
R R R R R R R R R R R R

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

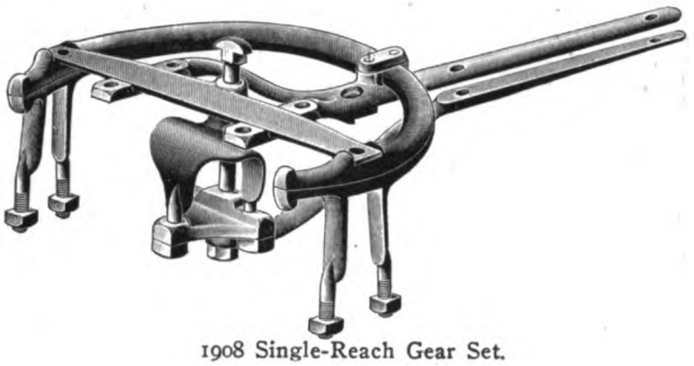
Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.
745 THIRD AVE., BROOKLYN, N. Y.

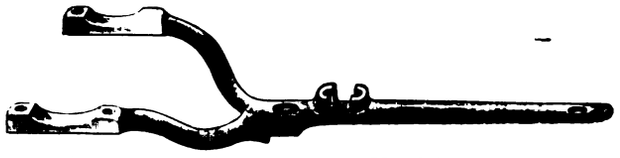
INDEX TO ADVERTISEMENTS.

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.



Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

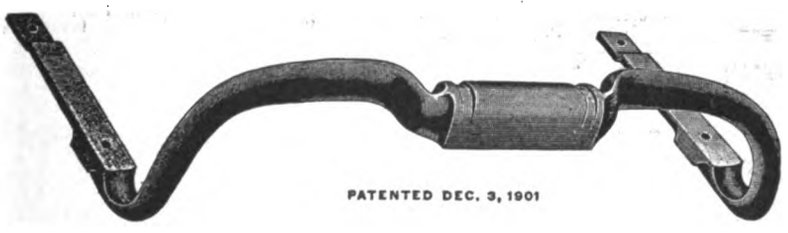
JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



PATENTED DEC. 3, 1901

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland, Pa.

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Please mention "The Hub" when you write.

Digitized by Google

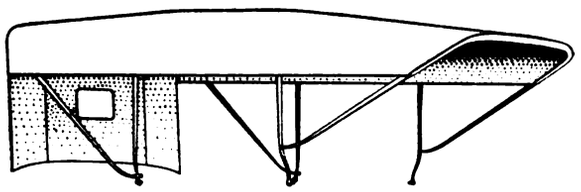
TOPS and Upholstering

FOR

AUTOMOBILES

AND

HORSE VEHICLES

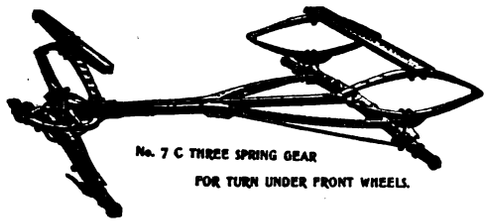


MANUFACTURED BY

Ball Buggy Top Co.

YORK, PENNSYLVANIA

THE OLD RELIABLE AND ONLY SCHUBERT BROS. GEAR CO.



No. 7 C THREE SPRING GEAR
FOR TURN UNDER FRONT WHEELS.

Always address us this way if you wish any of our specialties. Work-in-the-White Bodies, Seats and Gears for Carriages and Automobiles. Special work in bodies promptly attended to. Let us figure with you. Would you like our Catalogue?

SCHUBERT BROS. GEAR CO., Oneida, N. Y.

MANUFACTURERS

DESIRING FIRST-CLASS ILLUSTRATIONS OF THEIR PRODUCT, AT REASONABLE PRICES, SHOULD PERMIT US TO SUBMIT AN ESTIMATE.

Central Bureau of Engraving

COMMERCIAL ENGRAVERS

157-159 WILLIAM STREET, NEW YORK

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.
Dalzell Axle Co., South Egremont, Mass.
Timken Roller Bearing Axle Co., Canton, Ohio.

Bodies, Seats, Etc.
Woodman, Joel H., Hoboken, New Jersy.

Bodies in the White.
Miller Bros., Amesbury, Mass.
Schubert Bros. Gear Co., Oneida, N. Y.

Bolts and Nuts.
Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.
Wiese & Co., Wm., New York City.

Carriage Forgings.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.
Gifford & Son, John A., New York.

Carriage Goods.
English & Mersick Co., New Haven, Conn.
Fairfield Rubber Co., Fairfield, Conn.
Gifford & Son, John A., New York.

Dashes, Fenders, Rails, Etc.
McKinnon Dash Co., Buffalo, N. Y.

Engraving.
Central Bureau of Engraving, New York City.

Fifth Wheels.
American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Finished Vehicles.
Studebaker Bros. Mfg. Co., South Bend, Ind.

Hubs.
American Wood Block Co., The, Delphos, Ohio.
Koller & Co., J. B., Mechanicsburg, Pa.

Jacks.
Hankinson, J. V., Franklin, O.

Lamps.
Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Leather.
Howell & Co., T. P., Newark, N. J.

Machinery and Tools.
Barnes Co., W. F. & John, Rockford, Ill.
Bentel & Margedant Co., Hamilton, Ohio.
Defiance Machine Works, Defiance, Ohio.
Porter, H. K., Everett, Mass.
West Tire Setter Co., Rochester, N. Y.

Miscellaneous.
Bertram & Lamoreoux, Detroit, Mich.
Standard Oil Cloth Co., New York.

Ornaments.
Palm, Fechteler & Co., New York, N. Y.

Rubber Tires.
Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Kokomo Rubber Co., Kokomo, Ind.
Stein Double Cushion Tire Co., Akron, O.

Shaft Couplings and Anti-Rattlers.
Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Metal Stamping Co., New York City.

Springs and Gears.
Fitch Gear Co., Rome, N. Y.
Indianapolis Bolster Spring Co., Indianapolis, Ind.
National Spring and Wire Co., Albion, Mich.
Schubert Bros. Gear Co., Oneida, N. Y.
Spring Perch Co., Bridgeport, Conn.

Spokes.
Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.
Koller & Co., J. B., Mechanicsburg, Pa.

Trimming Materials.
Stevens & Sackett Co., New Haven, Conn.

Varnishes, Paints and Japans.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Masury & Son, John W., New York and Chicago.
Pierce Co., F. O., N. Y. City.
Smith & Co., Edw., N. Y. City.
Standard Varnish Works, New York City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

White Lead.
Eagle White Lead Co., Cincinnati, Ohio.

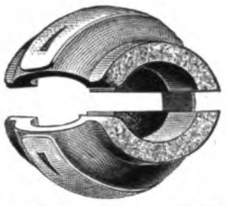
Wheels.
Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.

Wheel Stock, Bent Wood, Etc.
Crane & MacMahon, New York.
Koller & Co., J. B., Mechanicsburg, Pa.
Tucker Wood Work Co., Sidney, Ohio.

Digitized by Google

DON'T

Ask for a leather bushing with flimsy, impractical wire ring when you can get our



Rawhide Bushing

with metal attachment that securely holds the bushing on the ball, and prevents its being lost,—FOR LESS MONEY.

Be sure and ask for

The Hannan Shaft Coupler

WITH RAWHIDE OR BRASS BUSHING
ON ALL YOUR CARRIAGES

[Patented June 18, 1907]

Write for Samples and Prices

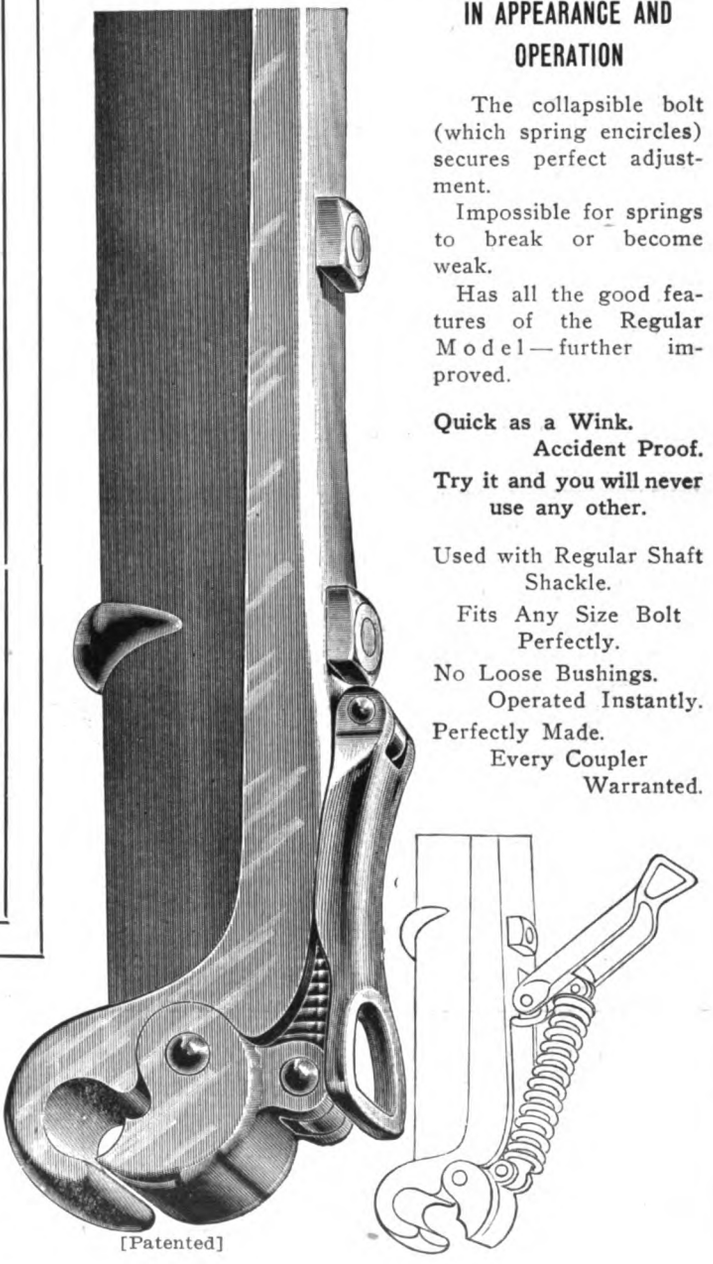
SOLE MANUFACTURERS

Metal Stamping Company, New York.

THE PERFECTED MODEL
OF THE

Standard Coupler

IS ABSOLUTE PERFECTION IN APPEARANCE AND OPERATION



[Patented]

The collapsible bolt (which spring encircles) secures perfect adjustment.

Impossible for springs to break or become weak.

Has all the good features of the Regular Model—further improved.

Quick as a Wink.
Accident Proof.
Try it and you will never use any other.

Used with Regular Shaft Shackle.

Fits Any Size Bolt Perfectly.

No Loose Bushings.
Operated Instantly.

Perfectly Made.
Every Coupler Warranted.

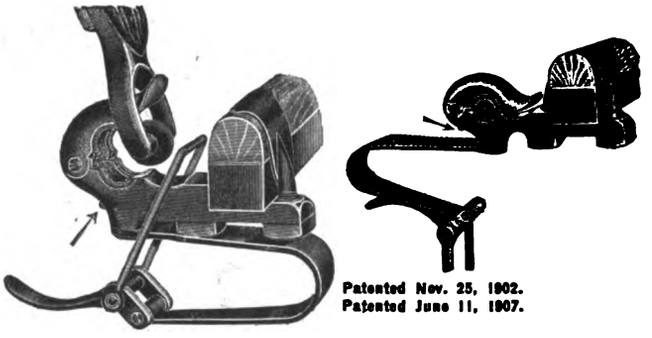
Send for New Catalogue containing over Four Hundred [400] devices used by the Carriage and Wagon Trade.

Digitized by Google

Eccles Ball Bearing Couplings

ALL OUR COUPLINGS ARE SHIPPED OUT WITH TWO PIECE BUSHINGS, FASTENED IN THE COUPLINGS

WHEN BUSHINGS ARE WORN OUT BY LONG USE, THEY CAN BE INSTANTLY REPLACED AND FASTENED INTO THE SOCKET BY OUR SPECIAL PROCESS



Patented Nov. 25, 1902.
Patented June 11, 1907.

THE SPRING IS PIVOTED AT THE FRONT SO THAT IT CAN BE TURNED OUT OF THE WAY OF THE WRENCH WHILE CLIPPING COUPLING TO THE AXLE.

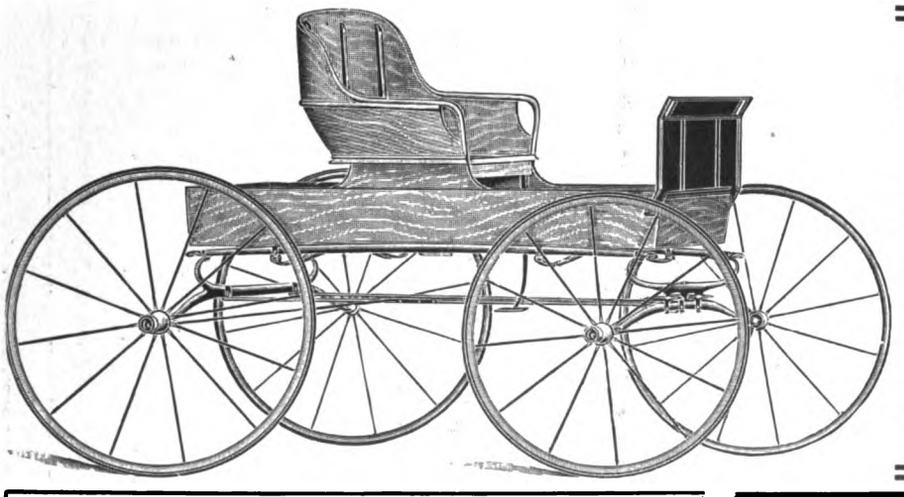
No Lost Bushings when you Use Our Couplings

We Make a Full Line of Carriage and Wagon Forgings

RICHARD ECCLES COMPANY

Catalogue No. 15 is our latest

AUBURN, NEW YORK



No. 215

SIDE BAR ROAD WAGON

ATTRACTIVE, ROOMY and POPULAR

One of our thirty styles that enjoy the call of live builders. Have you seen the latest in cutunders? If interested, see us.

We also build forty different types of gears and make a specialty of tops and trimmings.

WORK-IN-THE-WHITE

Would you like our catalogue?

AUGUST SCHUBERT GEAR CO.

ONEIDA, N. Y.

J. B. Koller & Company

Manufacturers of all kinds and sizes of

Finished Spokes and Bent Rims

Also all kinds of

SLEIGH, SLED AND BOB SLED RUNNERS

MECHANICSBURG, PA.

MILLER BROTHERS

Builders of

CARRIAGES

IN THE WHITE

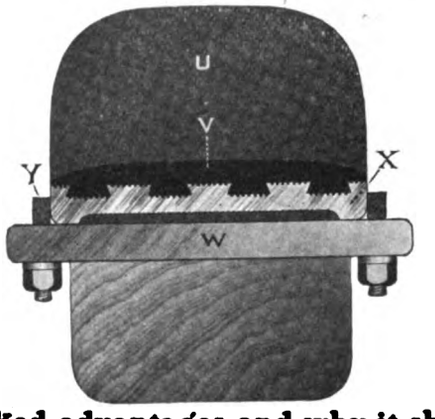
AND

Automobile Bodies

AMESBURY, MASS.

Digitized by Google

The Goodrich "WIRELESS" Motor Truck Tire



Wherein it possesses marked advantages and why it should appeal favorably to every user of Motor Trucks.

The tire consists of three factors: A special steel base (X) with dove-tailed grooves on the top surface; a hard rubber sub-base (V) which is inseparably united with the steel base; and a soft rubber tread (U) or tire proper, inseparably vulcanized upon the hard rubber sub-base. The tire is held in place on the felloe-band (W) by means of lugs (Y) on either side of the steel base, and a key on the felloe band which fits into a key seat on the steel base of the tire, and prevents circumferential movement. Thus the fastening point of the "Wireless" tire is steel to steel and absolutely secure.

ADVANTAGES:

The Goodrich "Wireless" tire affords the following advantages over all other type of motor truck tires:

(1) **Increased mileage,** because it affords a maximum external abrasion without affecting its fastening to the wheel.
(2) **Decreased cost per mile,** because it will give more mileage in proportion to its cost than any other rubber truck tire.
(3) **Freedom from repairs,** because the component factors form an inseparable unit and thus eliminate the usual hinging action of the rubber over internal metal fastenings.
(4) **Simpler method of applying,** because no complicated machine is necessary. This can be quickly and easily done with simple tools which we furnish.
(5) **Better service from the dual type,** because of decreased width of tread over all, affording maximum contact with road surface, and more perfect distribution of weight upon the spokes.
(6) **Adaptability to standard wheel sizes,** because the Goodrich "Wireless" tire may be applied to any wheel at present made for solid rubber motor truck tires.

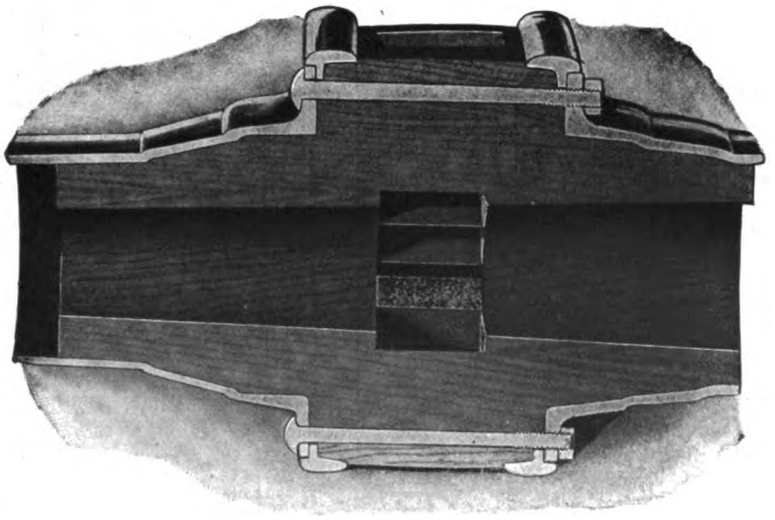
Information regarding sizes, prices, discounts, etc., upon application.

The B. F. Goodrich Company
Akron, Ohio

BRANCHES IN ALL LARGE CITIES.

Digitized by Google

The American Wood Block Co., Delphos, O.



SECTIONAL VIEW.

Hub Blocks

Green—Air and Kiln Dried. Sold by grade or timber run. Compressed blocks or otherwise. 3 in. to 12 in. diameter. Stock kept up to standard quality and ready for shipment at all times.

GILLETTE'S

"IDEAL"

HUB

It stands the Racket

The **IDEAL** hub makes the strongest wheel. Repairs are less than on any other style; actual use has proven these facts.

IDEAL is metal protected, wood to wood center, means elasticity; simplicity of construction, easily and quickly repaired, driven spokes best of all, no metal to corrode.

IDEAL has the patented inverted flange that prevents lateral strain.

IDEAL means less tire resetting.

Try it—it is guaranteed.

We want the wheel makers to use the **IDEAL** in their wheels.

The American Wood Block Co.

DELPHOS, OHIO

HUB BLOCKS HUBS DIMENSION STOCK

The Fairfield Rubber Co.

Manufacturers of Carriage Cloth, Imitation Leather, etc. For Automobiles and Carriages

Fairfield - - - Connecticut

ESTABLISHED 1886.

Correspondence School of Carriage and Motor Carriage Drafting

A thorough, practical tuition is given through this correspondence school. The theory and practice of construction, bookkeeping, perspective. Many men now hold good positions through taking the courses of instruction.

Principal, THOS. MATTISON,
Hillside Avenue, Bitterne Park,
Southampton, England.

Author of "The Coach Body Makers' Guide," $3.00; a practical treatise on "The Suspension of Carriages," "Bookkeeping," and other carriage building works.

The most power to the weight car of any of this type now on the market.

SIMPLE, DURABLE AND RELIABLE

Four years of success. Write for catalog and prices

THE BUGGYCAR CO.

ARMORY AND JOHN STREETS

CINCINNATI :: :: :: :: OHIO

Digitized by Google

OAK LEAF BRAND

PATENT
AND
ENAMELED
LEATHER
FOR THE
CARRIAGE
AND
AUTOMOBILE
TRADE

SAMPLES AND QUOTATIONS
FOR THE ASKING

J·H·HALSEY & SMITH LTD
NEWARK, N. J., U.S.A.

HARNESS CURLEY

Please mention "The Hub" when you write.

Digitized by Google

WM. WIESE
With Hardt, Von Bernuth & Co.
Since 1883.

WM. WIESE & CO.

ALBERT MAERTENS
With Hardt, Von Bernuth & Co.
Since 1894.

Formerly Carriage Goods Department of HARDT, VON BERNUTH & CO.

Carriage and Automobile Linings and Livery Cloths

Sole Agents in the United States for
WULFING'S CARRIAGE CLOTH AND EL DE BARAN GOATSKIN

66-68 Greene St., New York

MERITAS

CARRIAGE ENAMELED **OIL CLOTH**

If MERITAS peeled or scaled we couldn't keep on guaranteeing it. Look on the back of the goods. The MERITAS trade-mark there means Guaranteed. At your jobbers.

Standard Oil Cloth Co.

320 Broadway, NEW YORK.

HEADQUARTERS FOR CARRIAGE BUILDERS.

Let us offer you the most delightful hotel accommodation at moderate cost.

HOTEL EMPIRE

B'way 63d St.

NEW YORK CITY

In the centre of everything worth while.

Restaurant noted for its excellent cooking, efficient service and moderate prices

Rooms (use of bath)..$1.50
Rooms (with bath)... 2.00
Suites (with bath).... 3.50

FIVE MINUTES WALK TO SHOPPING AND AMUSEMENT CENTRES

All Street Cars—One Minute to "L" and Subway

Send for Guide of New York, Free

W. JOHNSON QUINN, Prop.

Our Carriage or Spring Edge Cushion Frame

Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

For Weak or Overloaded Springs.

VICTOR STEEL SPRING BUFFERS

Save wagon, prevent breakdowns, and add materially to the carrying capacity. If your dealer does not have them write to us direct.

Made in Four Sizes: 0, 1 1-4 in. spring & under; 1, 1-4 in. to 1 1-2 in. spring; 2, 1 1-2 in to 2 in. spring; 3, 2 in. to 2 in. spring.

Carrying capacity of each spring: No. 0, 400 lbs.; 1, 750 lbs.; 2, 1000 lbs.; 3, 1250 lbs.

Manuf'd by INDIANAPOLIS BOLSTER SPRING CO.
INDIANAPOLIS, INDIANA.

CARRIAGE STRASP

All kinds of strap work for carriage builders. Our capacity for work of this kind is practically unlimited. For quality and price we beat the world. Send sample and let us quote prices. -:- -:-

J. C. DECKER = = = = Montgomery Penna.

Digitized by Google

THE BRADLEY SHAFT COUPLING

OPEN

Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME!

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

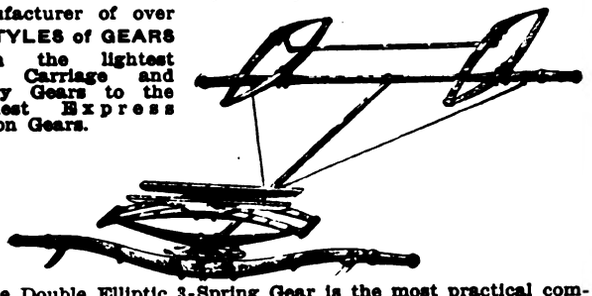
C. C. BRADLEY & SON, Syracuse, N. Y.

CLOSED

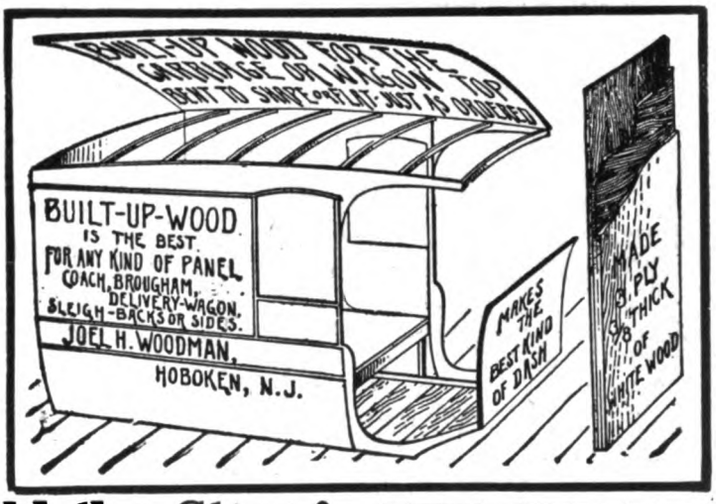
FITCH GEAR COMPANY

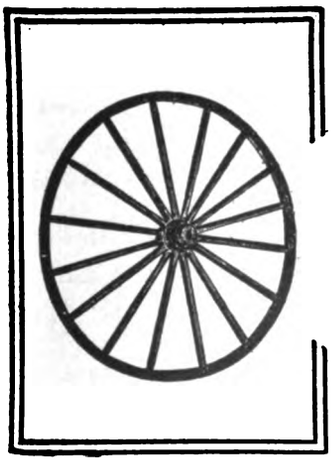
ROME, N. Y., U. S. A.

Manufacturer of over **40 STYLES of GEARS** From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.



The Double Elliptic 3-Spring Gear is the most practical combination business and pleasure gear on the market, and is equipped with Wrought or our Common Sense Short Turn Fifth Wheel. Send for our No. 24 Catalogue.





Time Has Told the Story!

Service and satisfaction always follow our rolling stock

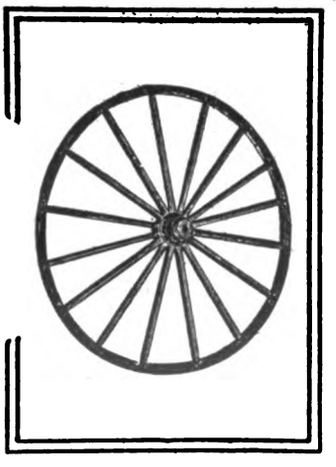
WHEELS

ALL KINDS—BEST QUALITY

Also RIMS and SPOKES

The Eberly & Orris Mfg. Co.

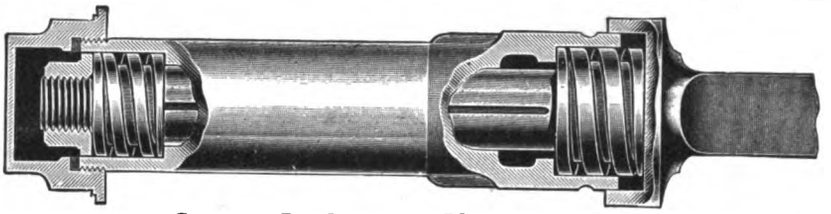
MECHANICSBURG, PA.



Please mention "The Hub" when you write.

Digitized by Google

PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

DALZELL AXLE CO., South Egremont, Mass.

BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

SOLID BENDINGS

MAKE FAULTLESS SEATS

CATALOG "H" SHOWS SIZES
WRITE FOR IT
THE TUCKER WOODWORK CO. SIDNEY, OHIO.

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway and 53d St. Elevated Stations and accessible to all surface lines.

Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIREPROOF

STRICTLY FIRST-CLASS

All Outside Rooms. No Carpets. All Hardwood Floors and Oriental Rugs.

Ten Minutes Walk to Twenty Theatres.

Transient Rates, **$2.50** with Bath, and up.

Restaurant Unexcelled. Prices Reasonable.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES } **C. T. RAYNOLDS & CO'S** { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES }

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

Bimel-Ashcroft Manufacturing Company

Main Office, POPLAR BLUFF, MO.

Factories:
POPLAR BLUFF, MO.
MOREHOUSE, MO.
DERMOTT, ARK.
LOUISVILLE, MISS.

Foreign Correspondence Solicited.

SPOKES

OUR GROWTH

1902—1,310,241 Spokes

1903—3,240,185 Spokes

1904—5,485,748 Spokes

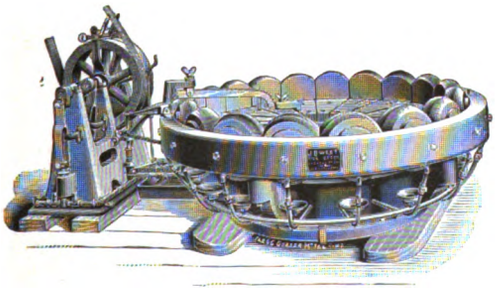
1905—7,845,653 Spokes

1906—7,927,759 Spokes

1907—7,748,839 Spokes

Our New Plant Increases Our Capacity to 12,000,000 Spokes

THE FIRST TIRE SETTER



you ever heard of was a **"WEST"**—probably, for they were on the market several years before any other and you are hearing more about them every year. Many of the older users are loudest in their praise. That's because they stand the test of time—they're made that way. Some of our Hydraulic machines have been **in use fourteen years** and are doing as good work now as when first installed. **Now**, we don't claim our machines are best simply because they have been longest on the market, **but because** we have been making a study of cold tire setting all these years and improving our machines as experience and observation taught us, and when you buy a **"West Hydraulic"** you get the benefit of this experience. Some people knowing our machines would set tires cold satisfactorily, thought some other would do as well—and the price was cheap—also machine. Now they wish they had bought a **"West Hydraulic."** **If you make a similar mistake it's your own fault.**

Buy a **"West Hydraulic"** and be happy. Hand or Power machines.

THE WEST TIRE SETTER COMPANY, Rochester, N. Y.

Digitized by Google

No. 140

WITH RAIL WELDED SOLID

McKINNON DASH COMPANY

CINCINNATI, O.
TROY, O.

BUFFALO, N. Y.

ST. CATHARINES
ONTARIO

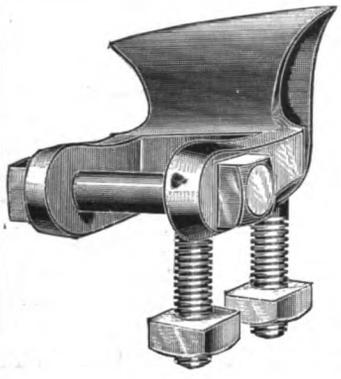
For a Moderate Priced Vehicle

OUR No. 140 WITH RAIL

Japanned or Plated

WILL OUTSELL ANY WORK WITH AN

OUT OF DATE PLAIN DASH



Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips 5/8 or 3/4 width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

1908 Catalog "H" on application.

COLUMBUS BOLT WORKS, Columbus, O.

Kokomo Solid Rubber Tires

¶ In rubber substance the Kokomo Solid Rubber Vehicle Tire is truly **SOLID.**

¶ Solid with the pure stock that has made them an exception to the ordinary tires of commerce.

¶ In Kokomo quality there is an established standard that is recognized as the highest ideal of tire construction. The Kokomo is a standard tire in every respect.

¶ Kokomo Tires always score in the running, and the longer the test the more convincing the results.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google

The Hub

In addition to the many carriage builders who are already manufacturing motor vehicles, reports from all parts of the country indicate increasing activity in that direction.

The commercial vehicle is also coming in for its share of attention, the mode of propulsion being equally divided between gasoline and electricity.

Oldest Carriage Journal in the World

1858 1909

CURLEY N.Y.

Vol. LI. No. 2 MAY, 1909

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

C. A. WILLEY COMPANY

Color Grinders

AND MANUFACTURERS OF

SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.

WILLEY'S SUPERFINE SPECIALTIES COLORS C COACH R TRADE MARK.

92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.

CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

ESTABLISHED IN 1791

Wm. Harland & Son

Beg to announce that they have removed their United States Headquarters to Genesee Street and Erie Canal, Buffalo, N. Y.

Wm. Harland & Son

IMPORTERS OF

Harland's English Varnishes

FOR

Coach and Automobile Builders, Railway and Street Car Finishing

AND MANUFACTURERS OF

High Grade Varnishes for all Purposes

FACTORIES:

MERTON,
LONDON, S. W.,
ENGLAND.

GENESEE STREET and
ERIE CANAL,
BUFFALO, N. Y.

400 EASTERN AVENUE,
TORONTO,
ONTARIO.

Western Branch, 40 Dearborn Street, Chicago. C. H. Schooley, Manager.

General Manager United States and Canada, H. Hagger.

Digitized by Google

JOHN W. MASURY & SON

MANUFACTURERS OF

Superfine Coach Colors and Varnishes

NEW YORK——AND——CHICAGO

SOLVED!

Is the way the motor car experts express themselves on the subject of tires for commercial motor vehicles after seeing and using the :: :: :: :: :: ::

KELLY-SPRINGFIELD SECTIONAL TIRE

Double or Single Track. Sectional View of Double Track.

Patented May 17, 1898; April 9, 1901.

With a grip on the road that means progress and security from the fault of solid tires—that of crowding the rubber ahead under load, which means disintegration—the motor wagon and truck owner will find in the Kelly-Springfield Sectional Tires the best tire for all heavy cars. Each section is dependent upon itself. If interested, write :: :: :: ::

CONSOLIDATED RUBBER TIRE COMPANY

NEW YORK, N. Y.—and—AKRON, OHIO

Branches:

BOSTON CHICAGO PHILADELPHIA ST. LOUIS DETROIT CINCINNATI SAN FRANCISCO

Digitized by Google

TO CONSUMERS OF BLACKS :

The intensity of blackness of bone black for use in fine coach colors, etc., depends upon the temperature at which the bones are burned. The higher the temperature, the denser and blacker the product.

Unfortunately this very dense and intense black is extremely deficient in covering power, and it is therefore the practice to burn the bones to an intermediate point, so as to obtain the greatest covering power at a sacrifice of the intensity of the color, due to the presence of organic and mineral impurities that tend to develop a brownish cast in the black, also a tendency to thicken after the addition of thinners.

We have succeeded in perfecting a process of grinding under water and subsequent treatment, whereby these impurities are eliminated, thus obtaining a black of the maximum covering power, coupled with great intensity.

The elimination of the impurities also prevents any livering or thickening of the black after thinning.

We believe our black now superior to any other on the market, for the reason that being grinders, we know the ideal of the consumer, and through chemical and mechanical means have been able to produce this ideal.

F. O. PIERCE COMPANY,
New York, N. Y.

Right Varnish Makes
Satisfactory Vehicles

Carriages, buggies and other vehicles that satisfy must not only be well made, they must also be **well varnished.** Your reputation and your profits depend upon the varnish you use. You can make no mistake by using

Standard Varnish Works' Varnishes

They are the standard of excellence because they represent a

Unity of Color, Lustre, Working, Drying and Wearing Properties

Of those not using these varnishes we ask for an opportunity to prove the validity of our claims

STANDARD VARNISH WORKS

CHICAGO NEW YORK LONDON BERLIN BRUSSELS

INTERNATIONAL VARNISH COMPANY, Ltd., Toronto

Please mention "The Hub" when you write.

Digitized by Google

When a medium priced Rubbing Varnish of great durability is required; when plenty of time can be given to the work (four days), and when a specially pale and free working Varnish is desirable, try the

Lawson Rubbing Body Varnish

The same care and attention is given to the compounding of this article to adapt it for its purpose as is given to the highest grade of Varnish manufactured at the Valentine factories.

VALENTINE & COMPANY

NEW YORK CHICAGO BOSTON TORONTO PARIS AMSTERDAM

☞ **The VALENTINE COACH COLORS are Standard because Dependable** ☜

DECALOMANIE

Tranfers for all Purposes

Scrolls, Figures, Flowers, Letters, Animals, Stripings, Numerals, Corners, etc.

Special Name Plates of all descriptions. Buggy Ornaments in sets.

Beautiful Scroll Effects for ceiling work in Limousine bodies; also a large and attractive line of **Plaid Designs** for panels in automobiles. Every live manufacturer should look up this proposition. Nothing is more effective in body embellishment. **Cane Work Transfers** are also a big specialty with us. Name your wants and let us talk with you. New catalogue will soon be ready and will be sent with cash orders of $1.00 or more. No paint shop is complete without our catalogue.

Palm, Fechteler & Co

67 Fifth Avenue, New York

Chicago St. Louis Montreal Toronto

YOU will have to put offset bow sockets on all of your Auto Seats next season.

Don't get the idea that any old crook or kink will go. They must be uniform.

We offset the first auto bow sockets, and have been doing it ever since.

No extra charge for our experience.

Cortland Forging Company

CORTLAND, NEW YORK

Digitized by Google

Taxicab Hardware

All kinds of Body Hardware especially for Taxicabs

Special Locks	Handles
Hinges	Megaphones
Top Fasteners	Brass Moldings
Leathers	Goat Skins

Trimmings of all kinds

High grade goods only—complete stock —prompt shipments

The English & Mersick Co.

New Haven, Conn.

82 Years' Experience in Every Can

E.S. 1827 & CO. **Edward Smith & Co.**

CARRIAGE VARNISHES

Everything from the Bare Wood to the Finishing Coat.

CHICAGO **NEW YORK**

HOTEL EARLINGTON

55 WEST 27TH STREET
Near Broadway, NEW YORK

This well known, absolutely fireproof hotel, after being entirely renovated, redecorated and fitted up complete with new plumbing has now reopened.

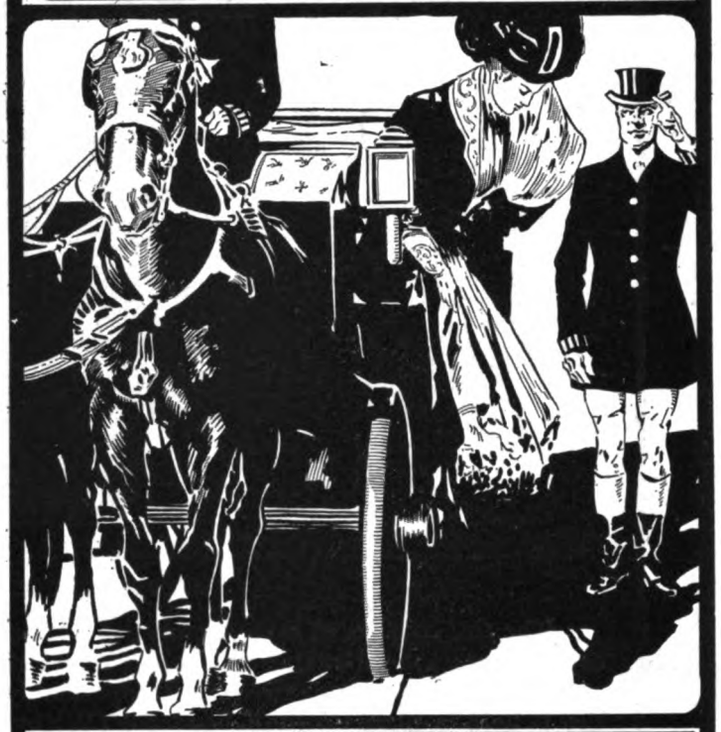
Rates from $1.00 and Up
With Bath, $5.00 and Up

Special rates by the season or year for permanent guests. A special feature will be the cuisine, both in the dining room and in the new cafe for ladies and gentlemen. A la Carte and Table d'Hote.

Hotel under the management of

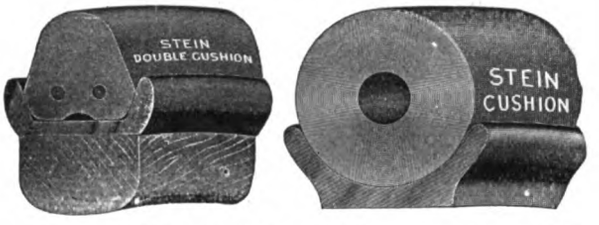
GUERNSEY E. WEBB
Formerly of the Ansonia.

STEIN DOUBLE CUSHION TIRE



EXPERIENCE

is the only true basis on which to figure if you wish to arrive at a fact.



Our story is best illustrated in our product. Be your own judge in deciding the question of tire supremacy.

Pure rubber must naturally be an important factor in a good tire. Rubber quality is only one of the many features that has won recognition for the

STEIN DOUBLE CUSHION TIRES

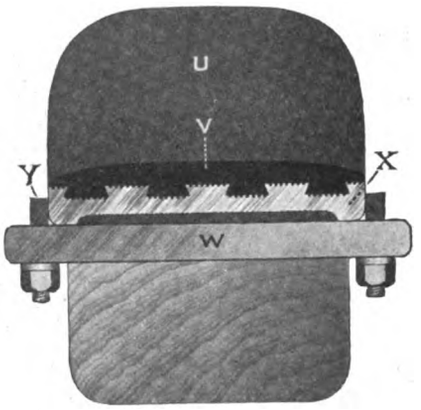
Be fair with yourself and your patrons. Apply the Stein Double Cushion Tire to your work and win favor with the driving public.

DO IT NOW.

STEIN DOUBLE CUSHION TIRE CO.
AKRON, OHIO

Digitized by Google

The Goodrich "WIRELESS" Motor Truck Tire



Wherein it possesses marked advantages and why it should appeal favorably to every user of Motor Trucks.

The tire consists of three factors: A special steel base (X) with dove-tailed grooves on the top surface; a hard rubber sub-base (V) which is inseparably united with the steel base; and a soft rubber tread (U) or tire proper, inseparably vulcanized upon the hard rubber sub-base. The tire is held in place on the felloe-band (W) by means of lugs (Y) on either side of the steel base, and a key on the felloe band which fits into a key seat on the steel base of the tire, and prevents circumferential movement. Thus the fastening point of the "Wireless" tire is steel to steel and absolutely secure.

ADVANTAGES:

The Goodrich "Wireless" tire affords the following advantages over all other type of motor truck tires:

(1) **Increased mileage,** because it affords a maximum external abrasion without affecting its fastening to the wheel.
(2) **Decreased cost per mile,** because it will give more mileage in proportion to its cost than any other rubber truck tire.
(3) **Freedom from repairs,** because the component factors form an inseparable unit and thus eliminate the usual hinging action of the rubber over internal metal fastenings.
(4) **Simpler method of applying,** because no complicated machine is necessary. This can be quickly and easily done with simple tools which we furnish.
(5) **Better service from the dual type,** because of decreased width of tread over all, affording maximum contact with road surface, and more perfect distribution of weight upon the spokes.
(6) **Adaptability to standard wheel sizes,** because the Goodrich "Wireless" tire may be applied to any wheel at present made for solid rubber motor truck tires.

Information regarding sizes, prices, discounts, etc., upon application.

The B. F. Goodrich Company
Akron, Ohio

BRANCHES IN ALL LARGE CITIES.

Digitized by Google

The Hub

Copyright, 1909, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. LI. NEW YORK, MAY, 1909. No. 2.

THE TRADE NEWS PUBLISHING CO. OF N. Y.
Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

REPRESENTATIVES:

J. Henry Klunk. J. G. Tanner.

Other Publications of Trade News Publishing Co.:

HARNESS (monthly) .....per year, $1.00
AMERICAN HARNESS AND SADDLERY DIRECTORY (annual) .....per copy, $4.00

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide du Carrossier*, 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

The C. M. A. A.

The Carriage Manufacturers' Association of America was called into being by the development, exigencies and requirements of our broadening and deepening industrial civilization. It is here to deal with conditions. The C. B. N. A. was called into existence to deal with men. Individuals no longer count for as much as they did. New factories have arisen. The transaction of business for the benefit of all is one of those new factors. Business as we understand it to-day did not exist thirty or forty years ago, and yet it was the men so long ago who possessed strong business instincts that placed the carriage industry upon its present foundation.

Since then organization and association have become as necessary as rain and sunshine to vegetation. Long ago carriage builders were in a sense independent of each other. Now there is a mutual dependence. It has become impossible and unprofitable for the individual to bask in his individuality. Threads of mutual self-interest and mutual dependence run all through our business relations. And the fundamental reason is that there are a hundred sellers to-day for every buyer. There were many sellers for each buyer thirty years ago, but these many sellers and buyers did not meet—did not know each other.

The dealer, the retailer to-day is master of the situation. He has a hundred sellers seeking him. In the scramble the sellers, the manufacturers have had to yield to their masters, and in this yielding there has grown up methods of business which finally demanded that the sellers get together for their mutual protection, hence the Carriage Manufacturers' Association of America.

John Hassett.

Those who intimately knew the late John Hassett tell of many indications afforded in his life that pointed to eminence in the business world. It is said of him that he possessed resources which, had he been cast in a newer section of the country, would have enabled him to develop into national prominence. This progress was slow, but he had laid a broad foundation for which future years would furnish a field. This development had reached a point where he had begun to formulate plans for an enlarged sphere of usefulness. He gave much study to business problems not only relating to his own industry, but to industries in general. His was a penetrating and analyzing mind and he laid a foundation for solving some practical problems connected with carriage factory management which was in advance of current understanding of such problems.

The Hickory Association.

Generally speaking, the National Hickory Association which has just held a meeting at Cincinnati, Ohio, will look after what might be termed the educational end, while the U. S. Government will look particularly after the practical end. Looking after statistics and establishing proper inspection and grading rules and urging more economy in the handling of hickory will engage the attention of the association for the present. It will have an efficient co-laborer in the Government along lines that are without the province of manufacturers.

The hickory question from being a local question, regarding a single country, promises to become, before many year, a world-wide question. The hickory interests will soon formulate its demands to know the hickory resources of the entire world. Our specific knowledge of forestry throughout the world is limited. Several conclusions as to the prevalence of this, that or the other timber in this, that or the other country will not suffice. Nor will it meet the case to admit that while there may be stores of hickory in at present commercially inaccessible regions, that therefore it cannot sometime and somehow be made available for the industrial requirements of distant countries.

One of the important steps to be taken sooner or later will be this ascertainment of the supply of hickory throughout the world, where it is and what expenditure of efforts will be necessary to deliver it in crude or more or less finished form to the world's factories and shops.

Digitized by Google

At present this appears to be a difficult and impracticable proposition. Future necessities will force its consideration. Hickory, like other timber, has its climates, and the timber expert knows about where to look for it. There are vast possible hickory areas concerning which at present very little is known.

Unknown Art of Timber Drying.

For everyday purposes the art or science of drying timbers is fairly well understood. There is a list of uses to which timber is put wherein the art of drying to retain the maximum of vitality and tenacity is essential. In a certain degree vitality is lost at the expense of tenacity and endurance. The precise drawbacks in the processes of drying, for instance, carriage timber or timber for parts has never been stated, though it is admitted that defects are inherent in the best developed drying processes.

This is a question and a work for timber students and experimenters in the drying yards. Possibly each timber has its own requirements to be considered. This point has not been considered. Vitality of timber is an evasive and elusive feature. There is no scientific reason why the deteriorating processes which set up in timber should not be very greatly arrested. Creosoting is a step in that direction, but this method is not applicable to most of the timbers used in construction processes. The apparently insolvable problem is to maintain in utilized timber the vitalizing moisture which it receives from nature before it is cut.

Gone and Going.

Timken, Walborn, Sargent, Tyler, Bittong, all well known in connection with the carriage industry, have passed to the beyond after, for the most part, long and busy lives. Timken retired, but soon returned. The case of idleness was slavery to him. The genial Bittong, and who did not know him in his territory, was a faithful servant to the great interest he represented. All filled a niche, and filled it well.

And who are those that are to-day taking these closing steps to the Great Divide. Some of them feel their course is nearly run. Some will be suddenly called. As we look over the long list of men who have done their part in the past in building up the carriage industry, the thought suggests itself, is the industry losing ground in point of strong and virile men, under the pressure of progress which is widening the field for endeavor. There is but one answer when we note the men of middle life now forging ahead like giants, the more than worthy successors to those who have gone before.

The Higher Rule of Business.

The meaning of the movements among manufacturers and dealers in recent years is bringing about a reversal of business methods by which selling prices have been determined by what competitors would sell the same product for to a basis determined by the actual cost of manufacture to which a competitive profit would be added. The old way is barbarous, cut-throat, anarchic, destructive. Yet under it our massive industrial system has been built. Philosophically regarded this competitive system was necessary, or at least inevitable, during the infantile and growing period of our industrial development. But now that it has been developed the competition which aimed at cutting the throat of every neighbor is found to be out of place, hurtful and contrary to enlightened conceptions of business and business morals.

With the general use of mechanical equipment, and a pratically uniform cost of labor and material, it has become about impossible for any one to undersell another and to do business honestly. Hence the uplifting of the commercial mind for a true basis of selling. That basis is cost plus profit. Hence also the general movement in the direction of a sound and safe system for estimating cost. Hence also the widespread effort to elevate business methods and morals to the end that each will abide in the conduct of his business by the fair and just and only possible safe rule to sell at a price which represents cost plus profit.

No Stronger Than Weakest Link.

High commercial and financial authorities have been commenting upon the cause of the ten thousand and more commercial failures annually in the United States. They attribute the chief cause of the great multitude of small failures to a lack of definite knowledge as to cost of merchandise, and to a fatuitous indifference to knowing, in the struggle to do business. The vast number of small failures, that is, under $5,000, are not reported in the annual tabulations. It is the course pursued by these small traders that undermines the small retailer. The business of the vast number of retail dealers in all lines of trade has to be and is conducted on the basis of those who fail. Note this point well. The distributing business of the country is carried on in a way that is calculated to prevent the failure of the thousands of small dealers who are failing every year. A chain is no stronger than its weakest link,

Tire Steel.

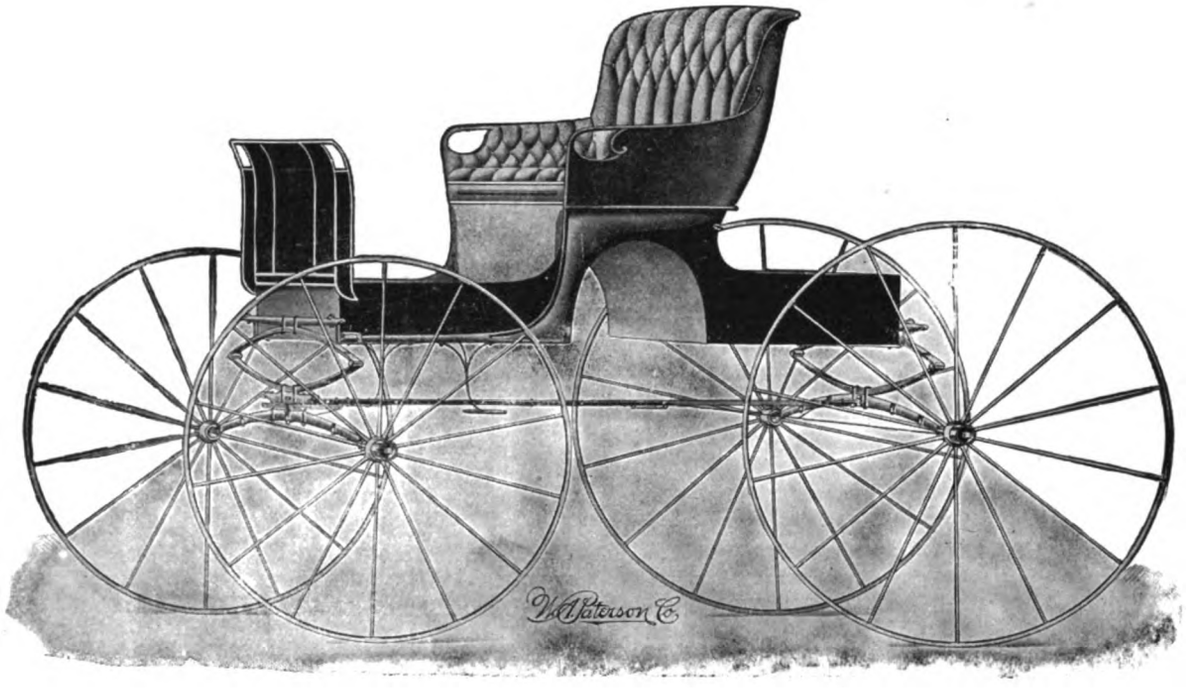
The tire steel users have been making known to steel makers for a long time that they are not fully satisfied with the quality of steel furnished. At no time in the history of the industry has as much research been made into the nature and action of steel as is now in progress in laboratories and in progressive steel making establishments. The investigations in the realm of hard steels is highly interesting, but apart from the production of some very fine grades of tool steel no definite or commercial results have been reached which afford tire steel users any consolation. The speed of automobiles, the capacity of wagons, the necessities of implement makers and carriage builders and of the other industries urgently call for a grade of steel which metallurgical chemists have not produced. The scrap pile in our manufacturing plants is a monument to metallurgical ignorance. Repair bills constitute a sign-board to more scientific application of the laws governing the chemistry of fine steel production.

The Coming Development.

One of the underlying motives of the present tariff agitation is to so modify certain duties on imports as to enable American manufacturers to build up an export trade. The growth of conditions which make possible a larger export business in manufactured articles has been slow. Two factors underlying this development are, first, extraordinary home needs, and, second, the world-wide expansion of agricultural activities. Home manufacturing capacity has now caught up with home demand, and surplus capacity is now probable. On the other hand, the world-wide boom in agriculture is arousing attention among American manufacturing interests, and these interests in turn are awaiting the co-operation of an American merchant marine development which will afford carrying facilities.

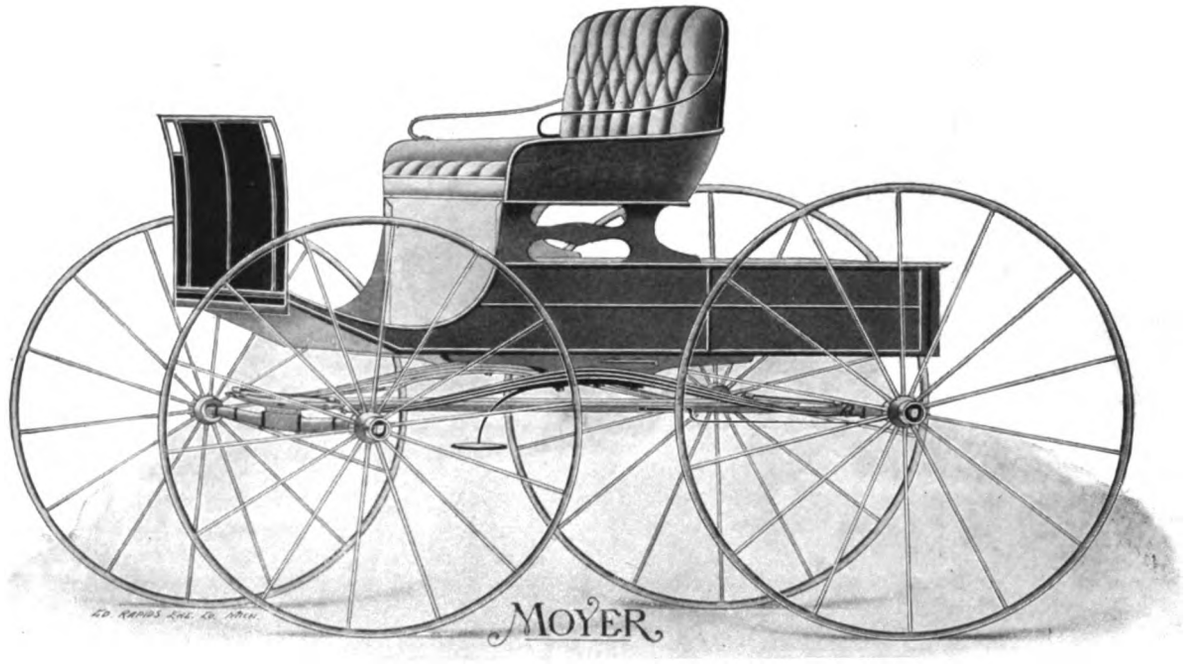
Digitized by Google

Illustrated Carriage Section, May, 1909



CUT-UNDER DRIVING WAGON.

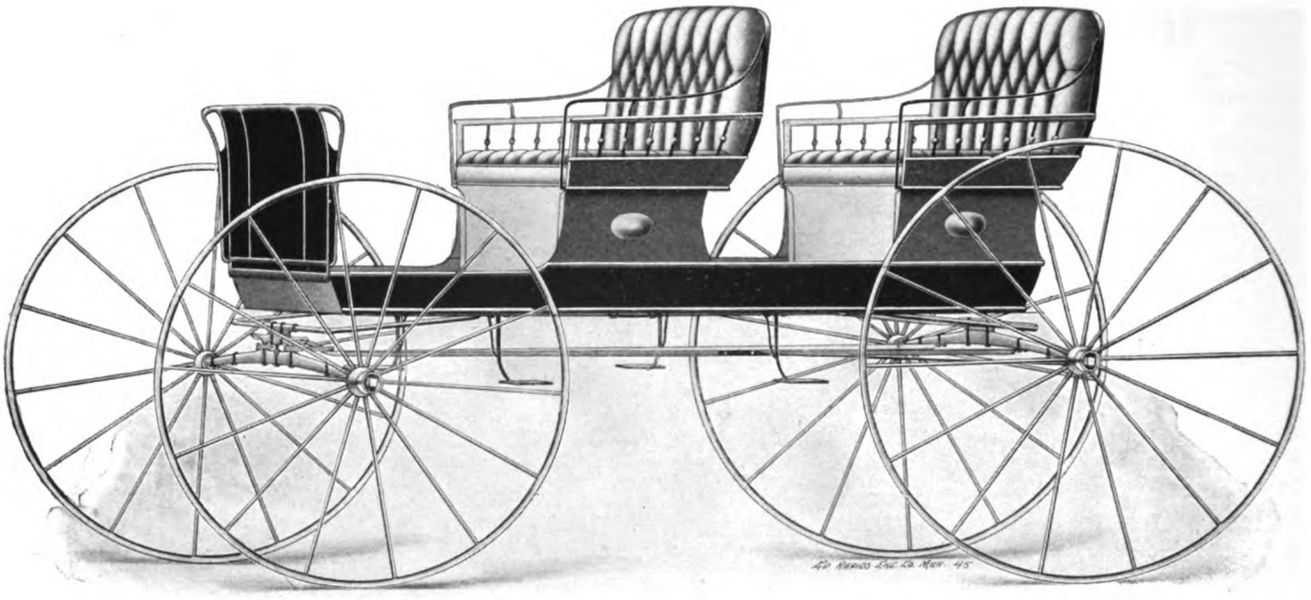
Built by W. A. Patterson Co., Flint, Mich.



SINGLE SEAT CONCORD DEMOCRAT.

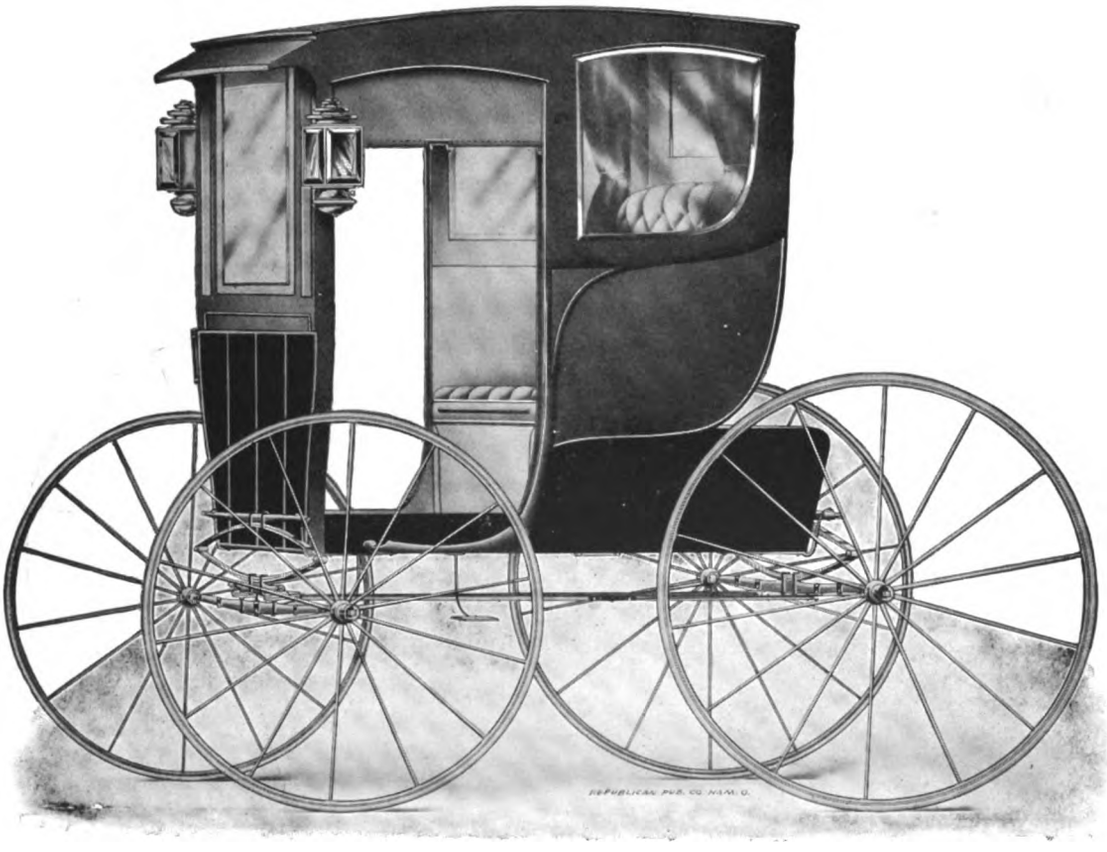
Built by H. A. Moyer, Syracuse, N. Y.

Digitized by Google



PARK AND BUSINESS WAGON.

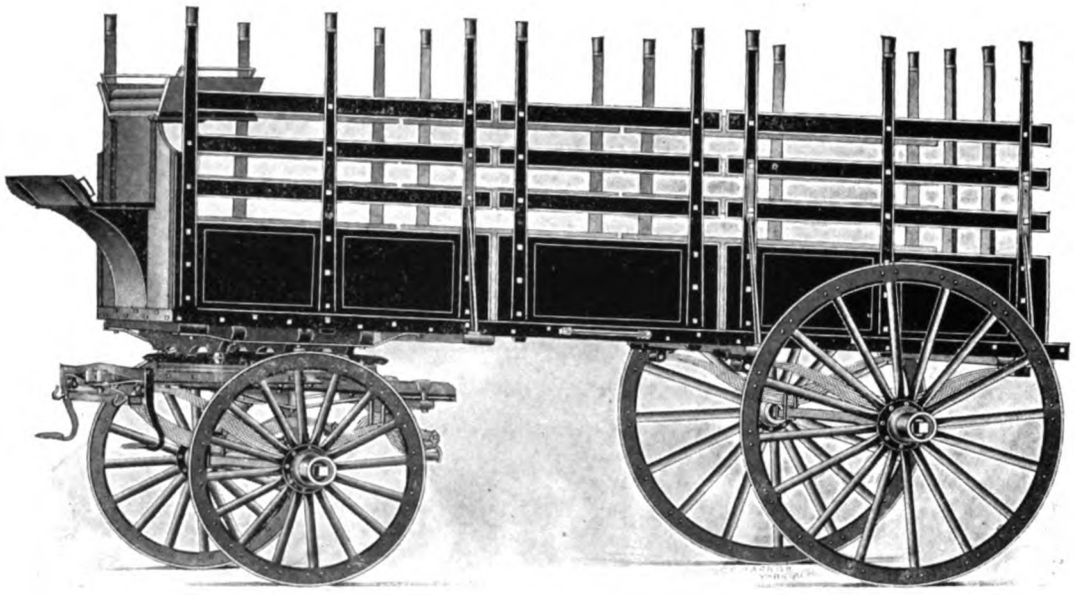
Built by Cortland Cart & Carriage Co., Sidney, N. Y.



STORM BUGGY.

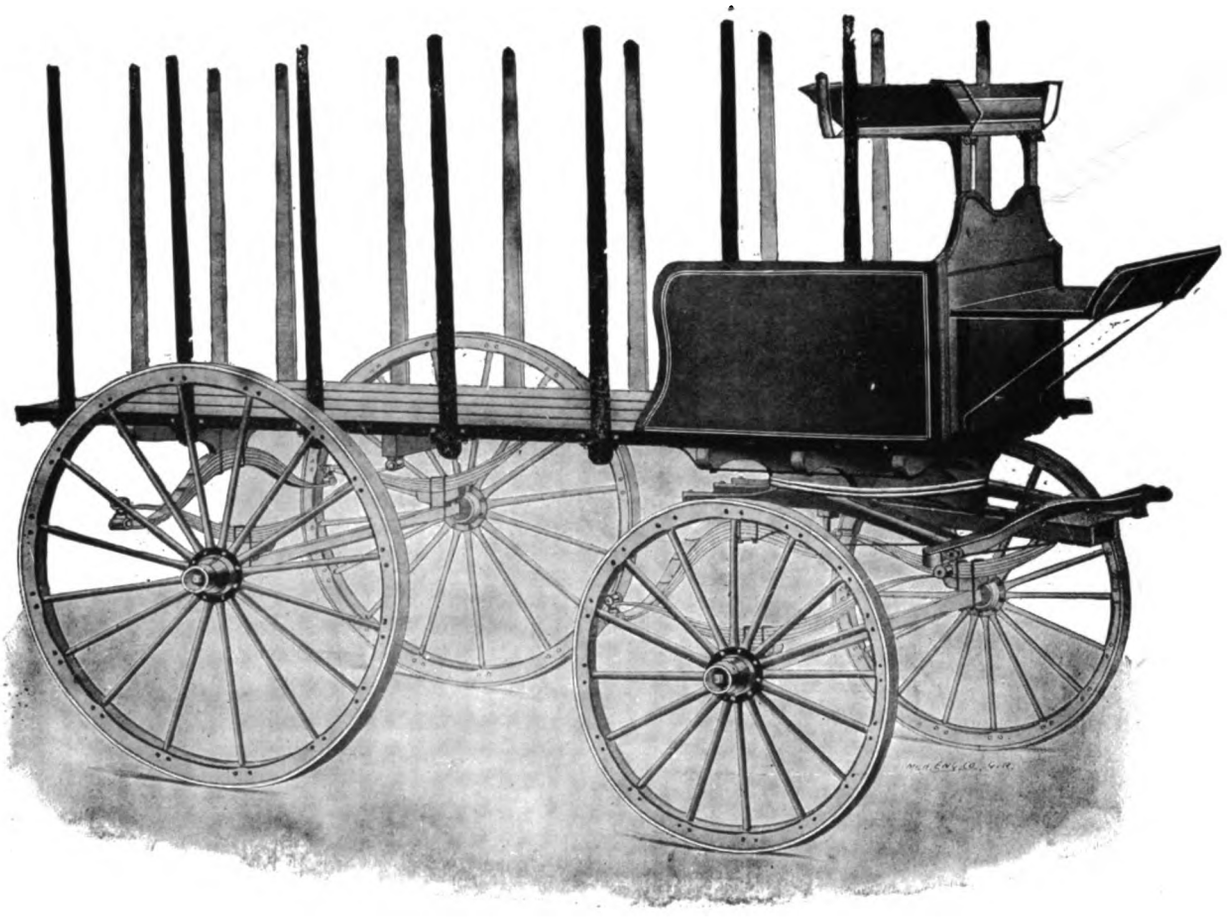
Built by Union City Carriage Mfg. Co., Union City, Ind.

Digitized by Google



RACK SIDE TRUCK.

Built by Martin Carriage Co., York, Pa.



WHOLESALE GROCER'S STAKE TRUCK.

Built by Auburn Wagon and Buggy Works, Auburn, Ind.

Digitized by Google

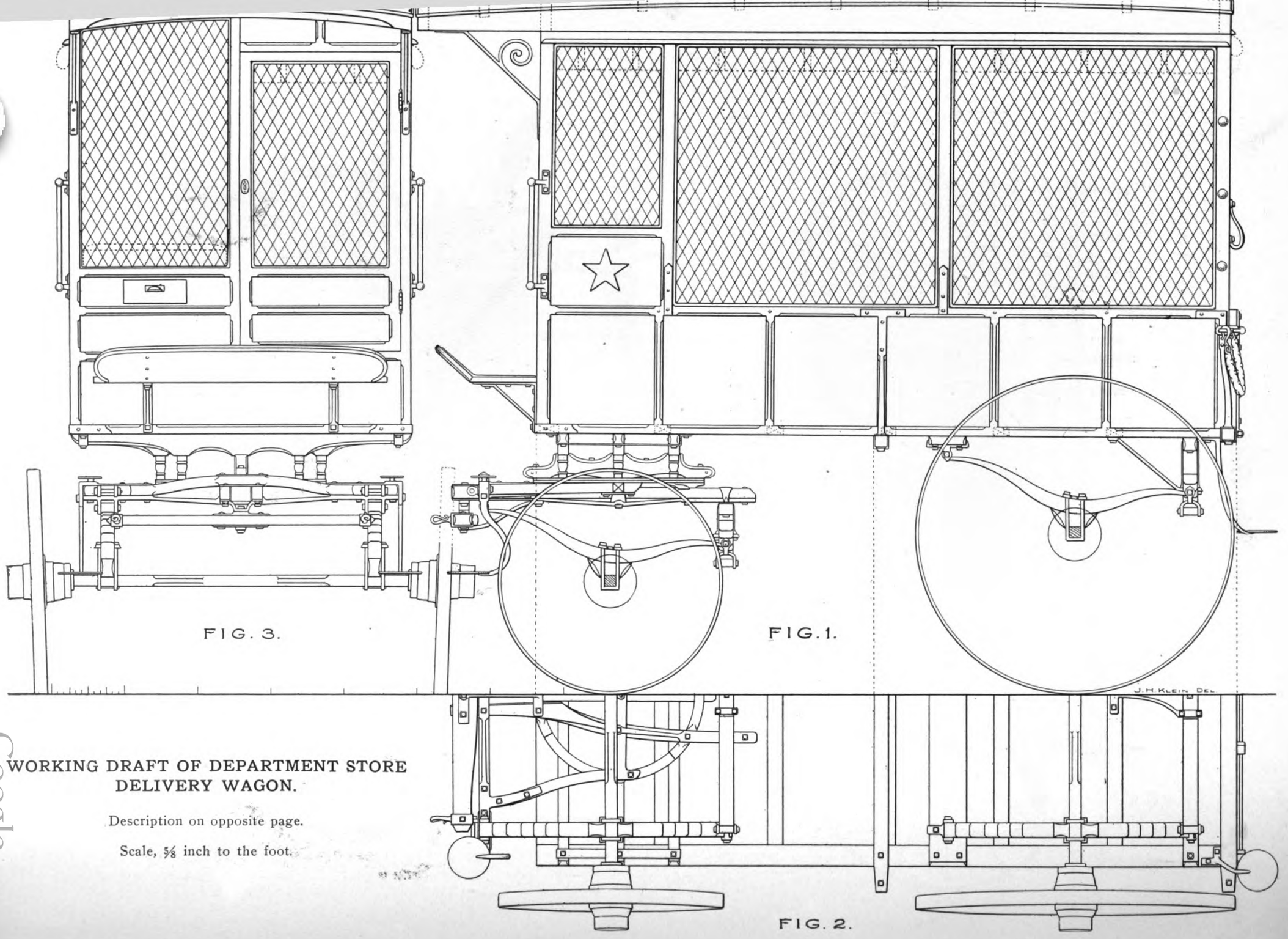


FIG. 3.

FIG. 1.

FIG. 2.

WORKING DRAFT OF DEPARTMENT STORE DELIVERY WAGON.

Description on opposite page.

Scale, 5/8 inch to the foot.

Digitized by Google

Wood-working and Smithing

WORKING DRAFT OF A NEW DEPARTMENT STORE DELIVERY WAGON.

Drawing on opposite page.

The demand for a wagon of commodious capacity, suitable for the transportation and delivery by one horse of the many bulky but light parcels purchased at the modern department store, is fulfilled in the design here presented, which in conjunction with many others meets the requirements of one large store in this city.

The body is built with seating accommodations in front for

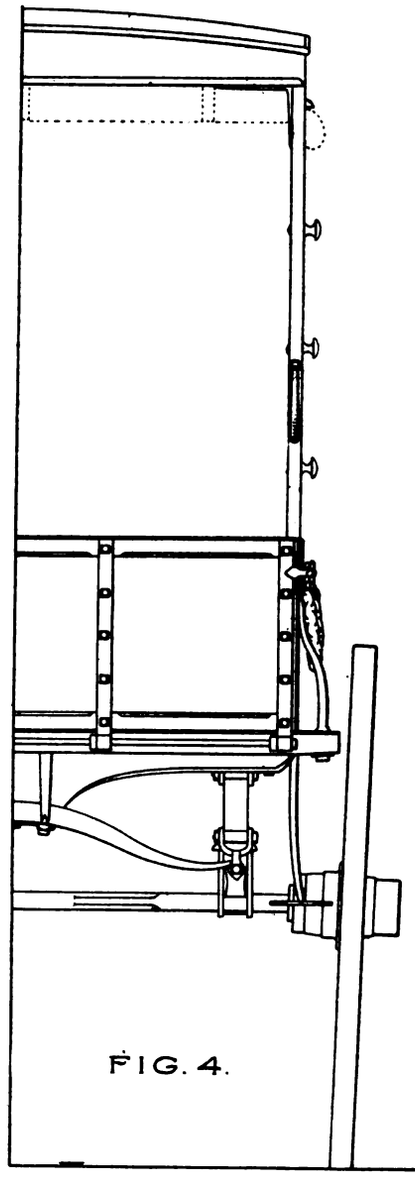


FIG. 4.

the driver only, the half on his left extending forward to the front corner post. This idea was devised for a two-fold purpose, viz.: to provide greater space in interior and at the same time compel the assistant to remain at the rear of wagon, while en-route, to safeguard the stock in transit. A step and handle are secured at the rear to the right side of body only, to permit the assistant easy access to same.

The entire body, except the rear, is furnished with wire screens and black oiled duck curtains. There are also rope knobs riveted on rear corner posts for securing excess loads.

Fig. 3, front view, shows method of framing that portion of body, and special attention is called to the door or gate built in left side, which affords access to body from front. The drawer in panel below driver's seat is for such papers or books as delivery men usually require. Vertical posts of gate are 2 in. wide and 1¼ in. thick, while remaining uprights, as well as cross rails of front are 1½ in. wide and same thickness. Foot and toe boards are of ⅞ in. ash.

Side elevation, Fig. 1, conveys to the reader a clear idea of the design and its suspension. The body as here shown is 9 ft. 5 in. long outside from post to post. Main or lower panel is 21 in. deep from top of rail to bottom of sill, and 33¾ in. deep from bottom of sill to top of upper rail of seat panel. Second upright is 18 in. back from front post. Height of body at center on outside is 5 ft. 11 in. over all, and 5 ft. 10 in. high in the clear on inside, ample to permit the average height of man to stand erect. Body is 56 in. wide outside.

Dimensions of various parts of body are as follows: Side sills, 1½ in. by 3½ in.; front cross sill, 1½ in. by 3½ in.; tail bar, 2 in. by 2½ in., plated. Intermediate cross bars, of which there are five, are 1½ in. thick by 2½ in. wide. These bars are shown in plan and by dotted lines in elevation. Main upper rails of body are 1½ in. deep by 1¼ in. thick. The uprights are merely champfered moldings ⅜ in. by 1⅜ in., nailed on to main panels, the latter being rabbitted into rails and corner posts and secured to sills by means of long screws and strap bolts on inside. Front corner posts are 1¾ in. by 2¼ in.; rear corner posts are 1¼ in. by 2½ in.; intermediate posts are 1¼ in. by 2 in.

In rear view, Fig. 4, is shown the location of handle and step for assistant's use, rope knobs, shape of roof, construction of tail gate, besides giving track, shape of spring bar and location of side springs.

The gear is a common type, but a little heavier than those of the regular one-horse delivery wagon. The three cross bars of cradle or upper carriage part are 1¾ in. thick, and kingbolt plate bar is 2⅛ in. thick. Plan shows layout of lower carriage part.

Dimensions of springs, wheels and axles are: Side springs, front and rear, 40 in. long from center to center, eight plates; cross springs, front and rear, 44 in. long, center to center, nine plates. All steel 2¼ in. wide. Wheels are Sarven patent, 36 in. and 51 in. in the wood, and of standard proportion for 1⅞ in. spoke. Axles are 1¾ in. front and rear. Track, 5 ft. 8 in. outside. Tire, 2 in. by ½ in. steel.

Painting—Body red, excepting seat panel, which is black. Champfers are black. Gear is yellow, striped black and fine lined red.

ASSOCIATION OFFICES MOVED.

The Chicago headquarters of the National Association of Agricultural Implement and Vehicle Manufacturers, including the office of Secretary Morrison, has been moved to rooms 631 and 633 American Trust building, 125 Monroe street. In this same building on the fifth floor are located the offices of the National Plow Association and the National Wagon Manufacturers' Association.

Sometimes when you are sorely tried by difficult problems in connection with your work, it is both helpful and refreshing to lay them aside until you have had a good night's rest.

Digitized by Google

CARRIAGES IN TRANSVAAL.

American Vehicles More Attractive Than Other Makes and Should Find a Good Sale.

There is a good trade in buggies and carriages in the Transvaal, says Consul Edwin N. Gunsaulus, of Johannesburg. Certain classes of American vehicles are always in demand, though with the increasing use of motor cars and the enlarged and perfected system of street car service, in Johannesburg particularly, the demand for the higher priced buggies and carriages is not as great as formerly. The vehicles most in use, and for which there is always a fair market, consist of the extension-top surrey, carriages with front and rear seats, and two-wheeled vehicles of the dogcart or trap variety. Canopy-top vehicles are not used in this country. In some classes of carriages, notably the kind in use in England, the American firms do not successfully compete in price and quality with British manufacturers. There is no reason why the American article should not have a much larger sale here than it now has. The American-built vehicle is usually much lighter. It is constructed on more attractive lines than those made elsewhere, and for use where bad roads are not encountered has many elements of popularity.

Some makes of Canadian buggies and carriages come into competition with the United States product, and in a few instances Canadian manufacturers have quoted lower prices for apparently the same article.

With a good grade of material and the quotations of satisfactory prices, American vehicle manufacturers should find a good market for their product in South Africa, particularly in Johannesburg and the surrounding country. Sales to dealers are made through some of the large American exporting houses which have local agents in the Transvaal. (A list of carriage dealers in Johannesburg and Pretoria may be obtained from the Bureau of Manufactures at Washington, D. C.)

CARL D. FISHER RESIGNS.

To Become Manager of the Standard Wheel Co. at Terre Haute.

Carl D. Fischer, for many years president and general manager of the Wapakoneta (O.) Wheel Co., resigned his position on April 12 to become manager of the Standard Wheel Co. at Terre Haute, Ind., the resignation to take effect June 18.

Mr. Fischer was elected vice-president of the Wapakoneta Wheel Company in 1884. In 1886 he became the company's secretary and general manager and continued in that capacity until the death of Mr. J. H. Timmermeister, whom he succeeded as president, and continued as general manager. His son, Emil, will go with Mr. Fischer and will occupy the position of assistant manager.

TO INSTALL UNIFORM ACCOUNTING SYSTEM.

A number of Cincinnati carriage manufacturers met at the Business Men's Club April 30 to discuss plans for installing a uniform cost accounting system. There were seven present, and they had a proposition from an Eastern concern offering an inducement if twelve of the local concerns adopt it. Chairman Otto Armleder was of the opinion that the remaining five would be secured in a few days.

REMOVAL OF OFFICES.

The Glidden Varnish Company moved its general offices from the Rockefeller building, Superior avenue, Cleveland, Ohio, on the 17th inst., to its new $100,000 administration building just finished, located at the new plant of the company. Ground was broken for the building in September last.

CINCINNATI CLUB DISCUSSES AUTO.

Say Their Business Shows Normal Increase Despite Rapid Strides of Motor Industry.

The Carriage Makers' Club, at its monthly meeting on April 8, enjoyed a discussion as to the effect on the carriage building industry of the development of the automobile business. The honk honk wagon was dissected from all angles, and they finally came to the optimistic conclusion that the carriage will live many years to come, and that the industry of building carriages will continue to be prosperous.

The principals in the discussion were Henry Ratterman, of Ratterman & Luth, and J. A. Miller, of The Continental Carriage Company. Mr. Ratterman produced statistics showing the enormous development in the automobile business, which has now an output valued at $240,000,000 a year. This has all grown up in less than ten years, he declared, and yet in that time the carriage building industry has shown normal increase, aside from the depression due to the panic which affected all lines of business. The automobile has, it is conceded, worked havoc with the high priced vehicles, but the medium priced product, the kind that goes to the farmer, the great consumer of buggies, is still in popular favor.

The automobile has found a market among a class of people who hitherto never enjoyed the luxury of the private carriage and the possession of horse flesh. It was ventured in the discussion that at least 70 per cent. of the owners of automobiles never owned a horse or buggy and came into the possession of the automobile by the fascination of its superior speed and cruising possibilities, and also for the social standing that attaches to the ownership of a gasoline buggy.

James F. Taylor said that while he believes the buggy and carriage building industry will live for years to come, the auto is coming very fast. "And you who live ten years more," he said in conclusion, "remember what I have said to night. The street cars will run without rails or wires; the automobile will have been reduced to simplicity and perfection that is now attained in the buggy, with relative cheapness, and it will fill our highways and byways, and the horse will be as much out of place in the order of things as we think the line of horse cars is that now runs through the cross streets of New York."

It was decided to have the annual outing in June, and when it was reported that there is $1,000 in the treasury, with more coming, "to have a grand outing."

The club is twenty-three years old, and in two years it will celebrate its silver anniversary. A fund will be raised to commemorate the event in fitting style.

M. J. McNamara, the new president, and the other officers recently elected, were installed in office. Otto Armleder retired as president.

COVERS THE EARTH BUT CAN'T BE READ.

Coming from Philadelphia to New York on the Pennsylvania Railroad one is amused, entertained and instructed by the great number of advertising bill-boards that are placed along the roadway. Between Newark and New York, as the passenger crosses the Jersey meadows, the signs are thickest, and here among the signs affording entertainment and instruction is one that affords amusement to thousands of passengers daily.

Generally a sign will attract a maximum of attention when it is cleverly designed and brilliantly painted. This one, however, has nearly faded from sight. In fact, a more poorly painted sign can scarce be imagined, wherein lies the joke. The sign is one advertising the product of a large paint house, and portrays a huge bucket of paint being emptied over the earth, and bears the boast, "covers the earth." One facetious passenger was overheard to remark, "they ought to use good paint for their advertising, anyhow."

Digitized by Google

Hickory Association Convention

The National Organization Holds Its Third Annual Meeting in Cincinnati

Hickory men from all parts of the United States met at the Hotel Sinton, Cincinnati, for the third annual meeting of the National Hickory Association, which opened its session on Tuesday, April 13, and continued for three ways. This association, as is well known, is working hand in hand with Forestry Division of the United States Agricultural Department for the conservation of our timber supply, to which end a great many experiments have been made.

An exhibit was made from the government experiment station at Perdue University, Lafayette, Ind. It consisted of spokes, shafts, rims and handles of hickory tested for strength and other qualities, and of the same things, similarly tested, made of eucalyptus, red fir, pine and oak, as substitutes for hickory. O. B. Bannister brought with him from Muncie, Ind., one set of eucalyptus wheels as an exhibit. He said:

"We had enough wood for eight sets of wheels, but only secured one set. We would do better next time, of course, but in order to use eucalyptus as a substitute for hickory we must first find out how to dry and treat it. We simply must find some substitute for it. It will be only a few years, at most, until the supply of hickory is exhausted."

Secretary H. D. Hartley, Detroit, had prepared immense maps showing the different timber areas of the country, and statistics showing the amount of hickory timber still standing. Though an expert on this work, he declined to make any statement as to how many years the supply will last, but others place it at from 15 to 30 years. Mr. Hartley said to a reporter of a local paper:

"The National Hickory Association is not in any way a trade association. We have nothing whatever to do with prices and have no secrets—all our meetings are open and every one interested in conserving one of the natural resources of the country is invited to be present. We are not interested in the tariff as a protection measure, for the United States is the only country producing hickory and exports a great deal of it. If there is any good substitute for hickory in South America or any place in the world we would like the duty taken off lumber, so it could come in free. We are working in every way to prevent waste and save the hickory supply, and, if it can be done, to produce a new supply."

The members of the association had an informal dinner at the Sinton Monday night.

President John W. Herron, Jr., welcomed the visitors to Cincinnati, and O. B .Bannister, of Muncie, Ind., chairman of the executive committee, responded.

Secretary H. D. Hartley, in his annual report, reviewed the work of the past year, and during the general discussion which followed the work already done along statistical and experimental lines was pronounced practical, and it was unanimously decided to not only continue it but to co-operate more vigorously with the Government and among the producers and users of hickory in fostering and protecting the present supply and encouraging the future growth of hickory.

The following committees were appointed and instructed to report at the next session:

Statistical information—F. A. Curtis, chairman; H. B. Bannister, Joseph Ashcroft, D. P. Cooper, R. M. Carrier, W. M. Hamilton, P. C. Scott, P. E. Loffler.

Nominations—Joseph Ashcroft, chairman; T. A. White, B. F. Von Behren.

By-products—C. W. Gates, chairman; C. F. Colville, H. D. Hartley.

Grades—Peter Lesh, chairman; B. F. Von Behren, C. D. Fisher.

Subcommittee on grades—Chairman. W. A. Snyder, on shafts and poles; F. B. Anderson, on rims; Joseph Ashcroft, on spokes; D. P. Cooper, on gear woods; C. W. Gates, on handles.

That the by-products, acetate of lime, naphtha, tar and charcoal, obtainable from the hickory stumps, boughs and sawdust could not be profitably produced in this country under existing prices and wage conditions, though they are produced at a profit in Prussia, Australia and several of the English colonies, was the opinion informally expressed.

Jared Maris, of College Hill, entertained the delegates after the afternoon session with stories about trees in that vicinity. He gave the history of one oak tree which was 507 years old when cut down, and which had grown as much in the last 89 years as it had in the first 200 years of its existence, demonstrating the benefit of the greater amount of sunlight, owing to nearby trees having been cut down, which it enjoyed in its old age.

The convention held no regular session on Wednesday, but the Wheel Manufacturers' Association, the Shaft and Pole Manufacturers, the Gear Wood Manufacturers, and other special manufacturers and users of hickory, held separate meetings and agreed to support the National Hickory Association in its efforts to establish a hickory grading bureau with a staff of inspectors.

The recommendations for standard grading rules for vehicle hickory wood stock, agreed upon at the conference last December, were discussed in detail by the different associations and several minor changes in them will be requested.

J. A. Newlin, testing engineer of the United States Forest Service, under whose supervision the exhibits of hickory and other woods at the convention, and many others, were made, was present in an advisory capacity. He represented the Forest Service at the conference last December, and was ready to give information on both the rules and general conditions affecting the hickory supply. Secretary Hartley said:

"This will be the first standardization of hickory and will be a good thing for all concerned in the trade. The establishment of the Bureau and the work of the inspectors will also naturally improve conditions, so far as stopping waste is concerned, in the forests, and that is one of the principal objects of the association."

At the Thursday session the association adopted grading rules and provided for the establishment of a grading bureau. There was a lively discussion, and those who favored four grades in place of the five grades recommended by the conference held last December were successful.

Messrs. W. A. Snyder, Piqua, Ohio; B. F. Von Behren, Evansville, Ind.; H. S. Parks, Metropolis, Ill.; O. B. Bannister, Muncie, Ind.; Frank Andrews, Toledo, Ohio, and Joseph Ashcroft, Poplar Bluff, Mo., were appointed to carry out the plans of the association in the matter.

The location of the bureau headquarters was not settled, but the committee will probably decide on Cincinnati.

Resolutions were passed declaring that the methods pursued by the United States Forest Service are practical and valuable. It was decided to co-operate to the fullest possible extent with the government in its work, both statistical and experimental, and render all possible assistance.

M. A. Mahurin, Columbus, representing the Carriage Builders' National Asociation, said the carriage builders fully appreciated the work being done by the hickory men, and that he would

Digitized by Google

recommend that the conservation of hickory be given a place on the program of the convention of his association in Washington next October, to the end that the carriage men may assist in the work.

E. A. Zeigler, of the United States Forest Service, gave the producers and manufacturers much information of value, which is given fully in another part of The Hub. In speaking to a reporter in relation to his address, Mr. Ziegler said:

"The program announces that I am to speak on 'Hickory Tree Planting,' but I will have very little to say on that subject. The fact is, that at present prices it would not pay to plant hickory trees, and, therefore, none will be planted. From 1900 to 1907, which is the last year for which the official figures are completed, the price of hickory lumber increased 20 per cent. in round figures, and it is still advancing and will continue to advance in price. I would not care to predict to what figure it will go within the next few years. As it advances, steel and other woods will be used more and more as substitutes.

"American vehicles are known the world over for their lightness and strength, qualities which are due to the use of hickory in the wheels and other parts of them. There is no other wood like it for light vehicles, and the United States is its only home. It is not known or grown in any part of the world except North America, a fringe of it extending up into Canada, and some of somewhat inferior quality, the pecan hickory, extending down into Mexico.

"I will speak rather of the growth of hickory, for preserving and encouraging that is practicable. To grow a commercial forest of trees from 8 to 12 inches measured 4½ feet from the ground, would require from 50 to 70 years, but after it was grown the replacing of it from the stump sprouts would re quire only from 30 to 50 years. The trees sprouting from the stumps grow much more rapidly, as they already have a root growth. If care is exercised in cutting out the other trees and in cutting down the larger hickory trees, a new forest will constantly be growing up, and will maintain the supply. More care is being taken by the big producers, but in the many cases of men who expect to hold the land for only a year or two, and cut over it only once, there is no consideration for the future, and the new growth is destroyed."

Jared Maris summed up the situation by saying: "It is a matter of dollars, and so long as the producers of hickory do not have to pay for their supply no new forests will be grown. There were no Government surveys in the original thirteen states, within which the remaining hickory is found, and as a result the titles overlap and are defective. A large proportion of the hickory is cut by men who do not own and have no right or title whatever to the land. The land must be owned, and the price of hickory must be much higher, before we grow any new hickory forests."

The meeting adjourned, subject to call in special session previous to the next annual meeting, after electing the following officers:

President—John W. Herron, Jr., Cincinnati.

Vice-president—Joseph Ashcroft, Poplar Bluff, Mo.

Secretary—H. D. Hartley, Detroit, Mich.

Treasurer—W. A. Snyder, Piqua, Ohio.

Executive Committee—O. B. Bannister, Muncie, Ind.; T. A. White, St. Mary's, Ohio; Peter Lesh, Memphis, Tenn.

Advisory Committee—F. D. Curtis, Chicago; J. D. Dort, Flint, Mich.; C. D. Fischer, Wapakoneta, Ohio; E. A. Archibald, Lawrence, Mass.; B. F. Von Behren, Evansville, Ind.; D. P. Cooper, Struthers, Ohio; E. D. McCullough, Wilmette, Ill.; Peter Lesh, Memphis; W. A. Snyder, Piqua; C. H. Gates, Louisville; P. C. Scott, St. Louis; R. M. Carrier, Sardis, Miss.; C. K. Kittredge, Chicago; H. D. Hartley, Detroit; J. M. Pritchard, Indianapolis.

The ability to cover up mistakes is sometimes very handy, but it is better not to make them. The man who never makes them, though, is apt to get a reputation as a liar.

HICKORY AND ITS GROWTH.

Interesting Address to the National Hickory Association Convention at Cincinnati, by E. A. Ziegler, of the United States Forest Service.

The Census showed in its lumber cut for 1907 a total of 203,211,000 board feet of hickory as compared with 9,255,000,000 feet for all hardwoods. This would indicate that the hardwood forests at present contain a little over 2 per cent. of hickory. The original forest contained a larger percentage of hickory—probably as much as 4 per cent. for the entire hardwood area. The forests of the eastern half of Kentucky have been estimated recently to contain about 5 per cent. of hickory. The lumber cut does not show the large quantity of hickory which is cut and shipped in the form of round billets, riveted or split spoke stock, etc. This form of material is frequently culled from the forest ahead of the lumberman and tends to cause the low percentage of hickory in the lumber cut before noted. Including this with the 203,000,000 feet of hickory lumber would raise the total cut to at least 350,000,000 feet per year. Add to this the hickory cut for fuel in localities with no transportation facilities, and the heart, pecky and other portions wasted, and the total soon amounts to 400,000,000 feet. Probably the canvass under way by your association will eliminate the uncertainty as to the hickory cut other than that sawed into lumber, so that the total cut can be definitely stated.

The latest estimates indicate hickory scattered over 100,000,000 million acres of hardwood forests, having a total stand of about 400,000,000,000 feet of timber. If hickory forms 3 per cent. of this forest (much of which is culled already for hickory—the lumber cut alone showing a little over 2 per cent.) there would be a total stand of 12,000,000,000 feet of hickory. Much of this is mature timber with an annual growth of less than 1½ per cent., as will be shown later. Hence there may be figured a growth of less than 180,000,000 feet against a consumption of about 400,000,000 feet. Though this is to some extent speculation, when supported by increasing difficulty in getting hickory timber and with rising prices, it is nevertheless sufficient to indicate that a thorough study of the growth of hickory is the first step in attempting to plan any relief measures.

Growth Study of Hickory.

This study was instituted, I believe, by the Forest Service in co-operation with this progressive association, and it is entirely proper that the facts ascertained should first be presented here. It was with reluctance that I consented to prepare this paper, since my connection with the study began only with the completion of the field work. A. T. Boisen was in direct charge of the study, and this paper is based largely on his most excellent report, which awaits only the strength test results for its completion and full presentation. Mr. Boisen has since severed his connection with the Forest Service.

Different Species of Hickory.

To many people who do not get into the woods all hickory is simply hickory. Those of you who know something of the woods end of the business, know there are different species of hickory, and an examination of these was the first step necessary for a growth study.

Though some botanists distinguish fifteen different species, by ruling out variations more or less local, this may be reduced to eight, falling in two general groups, viz.:

The Pecan Hickories, embracing.

1. Pecan (Hicoria pecan) which we will know from its thin-shelled edible nut. It is a distinctly southern species, though found as far north as Illinois and Iowa, attaining large size but with wood of little value to the hickory user. It is being widely cultivated for the nuts.

2. Water hickory of bitter pecan (Hicoria aquatica) is a small southern tree of inferior wood, confined to wet situations—often in cypress swamps.

Digitized by Google

3. Nutmeg hickory (Hicoria Myristicaeformis) is also a small southern tree of no particular value.

4. The bitternut hickory (Hicoria Minima) more often called pignut or pig hickory and sometimes willow hickory, is the only one of the pecan hickories which belongs to the north, being seldom found south of Kentucky. It is often a well cleared slender tree, but has narrow sap and rather brash wood.

The entire group of pecan hickories is characterized by the thin outer husks on the nuts and the more or less weak brashy wood. This entire group will receive no further mention.

The True Hickories also embrace four principal species. They are marked by nuts with thick outer husks and hard shells. Two of these species have very long scaly or shaggy bark, and two smooth or at most, flaky or fissured bark.

1. The Shagbark (Hicoria ovata), often called shellbark and scalybark, is the best known on account of its wide distribution and edible nuts. Young trees have smooth bark, but in old trees it scales off into loose strips or plates. It becomes a tall slender tree.

2. Kingnut (Hicoria laciniosa) is similar in appearance to the shellbark and often not distnguished by lumbermen. The bark is sometimes not as scaly as the shagbark, the nut is much larger and the branches have a distinct buff or orange color. It is a little stockier tree than the shagbark. It is often called yellow-twig, big-fruited shellbark and river hickory.

3. Black Hickory (Hicoria glabra) miscalled by some botanists pignut, known as tight-bark and switch-top, has a tight, smooth bark, becoming slightly flaked or rough-cubed in old trees. The nut is smooth and round, thin-shelled, and has a sweet kernel, but very hard to get out of the shell. Botanists give a number of names to varying forms of this species. This species does not grow as tall as the preceding species, but becomes very large under favorable conditions, such as the coves of the Cumberland Mountains.

4. Mockernut (Hicoria alba), known also as bigbud, white hickory, white heart and hog nut. The bark is never scaly, but is sometimes ridged. The sap is wide. The nut is rather large with thick husk and thick shell, with a small fleshy kernel. It is usually somewhat smaller than the preceding species, with heavier branches and sometimes a crooked trunk.

Of the true hickories, mockernut is a southern species of limited distribution, cut mostly in the Atlantic States from Pennsylvania to Florida. Kingnut is found only in the central Ohio and Mississippi valleys. Shagbark and Black Hickory, or switch-top, are the most widely and uniformly distributed, and furnish the largest part of the hickory used. Shagbark forms the largest part of the cut in the lower Mississippi valley, though it is found everywhere on the better soils. Black hickory, or switch-top, forms the larger part of the cut in Eastern Tennessee and Kentucky and in West Virginia and the hills of the Ohio Valley.

Conditions of Growth.

The true hickories are all found reaching their best development on the better, deeper and moister soils of the river bottoms, coves and ravines. The black hickory, or switch-top, is the least exacting and grows on high and dry knobs and hills, but always then of smaller and scrubbier growth. Mockernut will also be found even on the sandy upland shortleaf and liblolly pine soils, but not of large size.

Most of the hickories are able to stand a large amount of shade in their sapling stage and frequently are of extremely slow growth for that reason. They have the ability, however, to recover quickly from suppression when the overtopping trees are removed. In virgin forest they are seldom found in pure groups, though in second growth stands this sometimes occurs over areas of limited extent.

TIME REQUIRED FOR HICKORIES TO GROW 1 INCH IN DIAMETER.

Dia. inches Breast high	Eastern Md. and Penn.		Ohio Valley.			Northern Ohio.		Cumberland Mountains.			Mississippi Valley.			
	Black Hickory	Mockernut	Shagbark	Bitternut	Black Hickory	Shagbark	Black Hickory	Shagbark	Black Hickory	Mockernut	Shagbark	Black Hickory	Mockernut	Shellbark
1	11	10	9	9	9	9	11	9	11	8	8	11	7	13
2	11	8	9	8	8	9	10	8	11	8	8	10	7	11
3	10	8	8	8	8	9	9	8	10	8	8	9	7	11
4	9	7	8	7	8	9	8	8	10	8	8	8	7	11
5	8	7	8	7	7	8	8	8	9	8	8	8	7	10
6	8	6	8	6	7	8	8	8	9	8	8	8	7	10
7	8	6	8	6	7	8	8	8	8	8	8	8	7	10
8	7	6	8	6	7	8	8	8	8	8	8	8	7	9
9	7	6	8	6	7	9	8	8	8	8	8	8	7	9
10	7	6	8	6	7	9	8	8	8	8	8	8	7	9
11	7	6	8	7	7	9	9	8	8	8	8	8	7	8
12	6	6	8	7	7	9	8	8	8	8	8	8	7	8
13	6	6	8	8	7	10	8	8	8	8	8	8	7	8
14	6	7	8	8	8	10	8	8	8	8	8	8	7	8
15	6	7	8	9	8	11	8	8	8	8	8	8	7	8
16	6	7	8	10	8	..	9	8	8	8	8	8	7	8
17	6	7	8	..	8	..	9	8	8	8	8	8	7	8
18	6	8	8	..	8	..	10	8	8	8	8	8	7	8
19	6	8	..	..	..	..	10	8	8	8	8	8	7	8
20	6	8	..	..	..	..	11	8	8	9	8	8	8	8
21	6	8	..	..	..	..	11	8	8	9	8	8	8	8
22	6	8	..	..	..	..	13	8	8	10	8	8	8	8
23	6	9	..	..	..	..	..	8	8	10	8	8	8	8
24	6	9	..	..	..	..	..	8	8	11	8	8	8	9
25	7	10	..	..	..	..	..	9	8	..	8	8	8	9
26	7	11	..	..	..	..	..	9	8	..	7	8	8	10
27	7	11	..	..	..	..	..	9	8	..	7	8	8	..
28	7	13	..	..	..	..	..	9	9	..	7	8	8	..
29	7	..	..	..	..	..	..	9	9	..	7	..	..	..
30	7	..	..	..	..	..	..	9	10	..	7	..	..	..
31	7	..	..	..	..	..	..	10	10	..	7	..	..	..
32	8	..	..	..	..	..	..	10	11	..	7	..	..	..
33	8	..	..	..	..	..	..	..	11	..	7	..	..	..

Digitized by Google

Seedling Growth.

One of the characteristics of the hickories is the prominent tap root which begins development at once in the seedling. At one year of age thirty-two seedlings on red clay soil of the Ohio Valley showed average root lengths of 11 to 13 inches, and in three years about 2½ feet. This fact is a strong argument when planting hickory to plant the nuts in their permanent location and not try to transplant.

The average height growth (in the open or in light shade) of a number of seedlings on red clay soil of the Ohio Valley at five years was found to be 18 to 22 inches. However, hickory reproduction may be best secured by means of sprouts, if the tree is not too old when cut. An examination of 183 shagbark stumps showed that all the stumps 2 to 8 inches in diameter, had sprouted, but a decreasing number of larger stumps, so that at 14 inches only about half sprouted. The smaller stumps had fewer sprouts, but they were higher—varying from 3 feet for the first year's average growth on 3-inch stumps down to 2 feet on 18-inch stumps. Most of the sprouts on the larger stumps came from the roots, while on the smaller stumps from the stump collar. In no instance were many found starting from the top of the stump. Thirty-one stumps of black hickory showed about equal sprouting capacity, though the one-year sprouts average considerably higher. A comparison of one-year hickory sprouts with other species of hardwood follows: Black hickory, 3.3 feet; shagbark, 2.5 feet; white oak, 2.2 feet; black oak, 3.7 feet; chestnut, 3 to 5 feet; yellow poplar, 4 feet. The root sprouts, or suckers, most common on the larger stumps, came up 2 to 8 feet from the stump and usually grew from the old root system instead of developing an independent tap root.

Diameter and Height Growth—From Nuts.

As before stated, hickories stand a large amount of suppression, hence it was necessary on the growth study of virgin forest trees to eliminate that part of the growth occurring during the period of suppression. Even with this elimination the growth was found to be very slow—even slower than white oak. The choppings were found very much scattered and sufficient data hard to secure. In all, ring counts were made on over 700 trees (of which 250 were shagbark and 270 black hickory) in five general regions, viz.:

Eastern Maryland and Pennsylvania,
Ohio Valley,
Northern Ohio,
Cumberland Mountains,
Mississippi Valley.

Mr. Boisen states that the trees in Eastern Maryland and Pennsylvania were growing on agricultural soils of excellent quality, deep, reddish, sandy loams, underlaid with gneiss, and that the stands had been opened up and the growth stimulated.

The trees in the Mississippi Valley grew on the rich alluvial soils of the river bottoms.

Those of the Cumberland Mountains on rich north and east slopes. In these localities the trees were virgin forest growth and a little slower than the others.

The soil conditions were a little less favorable in the Ohio Valley, frequently a red clay underlaid with sandstone, limestone or slate, as found on the low hills of Southern Kentucky. The trees were second growth entirely.

The trees in Northern Ohio, though second growth, are somewhat slower on account of the soil conditions—an almost impermeable clay which requires underdrainage for farming.

The tendency of all the species in all the regions is to show a slower growth in the small trees and very large trees, though several of the species in good soil show an increasing or constant rate of growth to the largest diameters. In the Mississippi Valley bottoms and coves of the Cumberland Mountains shagbark exceeds or equals black hickory. On the poorer soils of the Ohio Valley hill and Northern Ohio, black hickory has the advantage. In no species, however, and in no locality is an average of less than 6 years per inch found, and for the entire period from seedling to merchantable size this average rises to from 7 to 9 years, according to the species, soil, etc. An 18-inch tree increases in volume about 13 per cent. by adding 1 inch. Doing this in 8 years shows an annual increment of about 1½ per cent. at this size.

Coppice.

Coppice growth was scarce, but sixteen black hickories and six shagbarks in rather dry situations on red clay soil, near Bardstown, Ky., and Paoli, Ind., showed the following rate of growth:

Age Years	Black Hickory Diameter Inches	Black Hickory Height Feet	Shagbark Diameter Inches	Shagbark Height Feet
10	2.0	18	2.4	13
20	3.8	31	4.4	26
30	5.5	43	6.3	38
40	7.0	52	7.4	46
50	8.5	59	8.6	54

This might be somewhat exceeded on better soils.

Seedling hickory, as before shown, is slower growing, and the following growth would give an indication of what might be expected from plantations in Southern Indiana and Northern Kentucky:

Age Years	Black Hickory Diameter Inches	Shagbark Diameter Inches
10	1.0	1.2
20	2.0	2.8
30	3.2	4.0
40	4.4	5.4
50	5.5	6.8
60	6.8	8.0
70	8.4	9.4
80	10.0	10.5
90	11.4	11.6

The average growth in height from the seed at 20 years varies from 8 to 20 feet, according to the species and region. At 40 years, from 23 feet to 43 feet; at 60 years, from 41 feet to 68 feet. These figures are again averages—the lowest for old growth trees—and may be exceeded under management.

Height Growth—Feet Above Ground.

Age Years	Cumberland M'tns Shag-bark	Cumberland M'tns Sw'h-top	Cumberland M'tns M'ker-nut	Mississippi Valley Shag-bark	Mississippi Valley Sw'h-top	Mississippi Valley M'ker-nut	Ohio Valley Shag-bark	Ohio Valley Sw'h-top	Ohio Valley M'ker-nut	N. Ohio Sw'h-top
10	3	6	4	4	6	9	7	9	10	7
20	13	14	17	8	19	18	18	19	24	20
30	20	24	26	15	27	25	32	32	40	35
40	27	32	33	23	34	30	43	42	52	48
50	34	40	39	32	40	35	51	51	62	61
60	41	48	45	41	46	40	58	58	69	69
70	48	55	50	50	52	44	64	64	..	..
80	54	62	55	58	58	49	70	69	..	..
90	60	69	60	65	64	53	75	..	..	..
100	66	75	66	71	69	57	79	..	..	..
120	78	85	76	81	79	65	..	..	..	..
140	89	93	85	90	88	73	..	..	..	..
160	99	99	94	97	96	80	..	..	..	..
180	108	104	102	103	101	88	..	..	..	..
200	116	108	109	109	105	95	..	..	..	..

Yield.

The preceding data furnishes an idea of the growth of the individual tree. This, with the number of trees per acre, will determine the yield. For this purpose 30 sample plots of about one-quarter acre each were measured in even aged stands of about the proper density. Twenty-one were in the lower Mississippi Valley and nine in Ohio and Pennsylvania. Thirteen were shagbark, seven mockernut, six black hickory or switch-top, and four mixed. Twenty-six were of seedling origin and four of sprout origin. It is evident that the data is entirely insufficient, scattered over the different species and regions, to be at all conclusive, yet they will establish an approximate yield as follows:

Digitized by Google

Average Yield of Hickory.

Age Years	Average Diameter Breast High Inches	Average Height Feet	Trees No.	Total Cu. Ft.	Volume Merchantable Cu. Ft.
30	4.0	33	700	800	100
40	5.0	41	480	1,100	300
50	6.2	49	320	1,400	500
60	7.2	57	230	1,700	700
70	8.1	64	180	2,000	850
80	9.0	69	155	2,300	1,000
90	9.8	74	135	2,600	1,150
100	10.5	78	120	2,900	1,300
120	11.8	85	100	3,500	1,650
150	13.4	92	75	4,400	2,000
200	19.0	100	65	5,700	2,700

Little difference could be noted in the yield of the different species, bearing out the diameter growth data in this respect. The yield from the seed is about thirty cubic feet per acre per year, only about one-half being merchantable material, however. The sprout stands exceeded this, and give an indication of about forty cubic feet for young sprout forest. This yield is equal to 0.3 to 0.5 cord per acre per year. A study of planted groves in Illinois showed that catalpa would produce 1.3 cord; black walnut, 0.9 cord; ash a trifle less than 0.9 cord, and Osage orange a little over 0.5 cord per acre per year. These were on good soil. Yellow poplar in Virginia showed a production of 1.1 cords, and chestnut in southern New England 1.0 cord per acre per year. Oak in Germany on fair soil produces about forty cubic feet (0.4 to 0.5 cord) per acre per year. This European oak is one of the white oaks, and our white oak will approach it in growth. Red and black oaks grow faster.

It is thus seen that the hickories are slow-growing trees, approaching white oak, but greatly exceeded by other hardwoods. Although the mill price is also higher than other hardwoods, the stumping price is not, as is seen by the following list of species in order of prices:

Average Mill Price, 1907.		Average Stumpage Price, 1907	
1. Walnut	$43.31	1. Walnut (estim'd)	$30.00
2. Hickory	29.50	2. White Pine	8.09
3. Ash	25.01	3. Ash	7.58
4. Yellow Poplar	24.91	4. Basswood	6.79
5. Cypress	22.12	5. Hickory	6.69
6. Oak	21.23	6. Oak	6.52
7. Basswood	20.03	etc.	
8. Sugar Pine	19.84		
9. White Pine	19.41		

It is of course true that logging and milling hickory is more expensive than other trees, and accounts for some of the difference—hickory exceeding ash in mill price by $4.50, but bringing 90 cents less on the stump. Hickory lumber brings over $10 more at the mill than white pine, yet the stumpage is $1.40 less.

Now from the side of growth—hickory brings less than white pine on the stump, yet white pine will produce four times as much wood per acre per year. Hickory brings less than ash, yet ash grows about twice as fast. Hickory brings just a trifle more than mixed oak, but mixed oak will produce better than hickory. In other words, hickory is not now bringing as much (proportionately to the growth) as oak and ash, and only about one-fifth as much as white pine. White pine stumpage has reached the point where it pays to raise it—even by planting. The hardwoods, hickory especially, have not. To yield a four per cent investment hickory must sell for about $20 per thousand ($10 per cord) on the stump—figuring land and planting at $10 per acre. I am aware that some of you are pretty near that mark now, and know that by the time a crop would be ready, unless a substitute is found, the price will be satisfactory to the grower.

Results of the Study.

The study furnishes the conclusion that the hickories are slow-growing timber trees.

The present average price (for saw timber at least) is much below the cost of growing.

The present supply comes largely from a forest where hickory is a small factor, and the growing scarcity must soon raise the price to its proper level.

The future supply should still largely come from farmers' woodlots and timber tracts, and with judicious cutting the proportion of hickory may be maintained. The greatest economy will be necessary on the manufacturing end. Increased prices should stimulate the proper care. One great advantage in growing hickory is that it is of greatest value when young and largely sapwood.

Shagbark (Hicoria ovata) and black hickory or switchtop (Hicoria glabra) are the two most important species, and have wide sapwood. If planting is done, a fairly good and moist soil is a requisite, the shagbark requiring the better soil of the two. Kingnut (Hicoria alba) should be planted on very moist or wet soils. The nuts should be planted in the permanent position, since transplanting is difficult on account of the log tap root early developed. Spacing should be about 5 x 5 feet, and several nuts planted near together—about two inches deep. Spring planting should be practiced, keeping the nuts in moist sand over winter. Some little experimenting should be done with pure plantations, and mixtures with white ash or other light-needing species. A plantation will require 50 to 70 years from the seed to become merchantable, but after being once established the sprout growth may be cut every 30 to 50 years. Shagbark should begin to bear nuts at about 30 years from the seed, and later the nuts should be an important source of revenue.

Since the maintenance of the hickory supply is of great advantage and importance to the country, state governments should, through their Departments of Forestry, not only disseminate information on the proper methods of managing hickory, but should conduct experimental forests containing hickory, and make plantations of pure and mixed stands of hickory, with the idea of discovering the best methods of growing it. This association can do nothing better than encourage the different states to assume their full duties in this respect as quickly as possible, and also assist in bringing the need for the greatest economy before the consumers.

TECHNICAL SCHOOL EXHIBIT.

The annual exhibition of drawings made by pupils in the Technical School took place in the school rooms at 20 West Forty-fourth street, New York City, on the evenings of April 19 and 20. The exhibit was an excellent one and was visited by a large number of people.

In addition to the usual display of the different forms of horse-drawn vehicles, many drawings of the various forms of automobile bodies were shown, as well as a number of drawings of the complete automobile. A large proportion of the latter were drawn in perspective and then beautifully colored.

There were eleven graduates this year, a majority of whom have already secured positions in automobile factories.

WAGONS AND EQUIPMENT FOR EXPRESS COMPANY.

An American consular officer in Latin America reports that there is at present being incorporated in the city in which he is located, under the laws of the local government, a company for the purpose of conducting a general baggage transfer and express business in that region. The company is to be capitalized at $15,000, and the stock is all subscribed for by the five American citizens who are organizing the concern. The consular officer states that the secretary of the company expects to be in the United States shortly for the purpose of forming business connections and purchasing such wagons and other equipment as will be necessary for conducting the affairs of the corporation.

Digitized by Google

ACTING PRESIDENT OF THE C. B. N. A.

Through the death of Mr. John Hassett, Mr. Maurice Connolly, first vice-president, becomes the acting president of the C. B. N. A., and will preside at the meetings to be held this fall in Washington.

There is very little designated for the president to do but to preside at the meetings, as the committees had already been appointed by Mr. Hassett. Notwithstanding that the presiding at meetings and the appointing of committees are the only duties laid down for the president, most of them have found plenty to do during their year in office.

Maurice Connolly, Acting President C. B. N. A.

Mr. Maurice Connolly's early education was received in this country. He attended Georgetown University, but received his degree of Bachelor of Arts from Cornell University, Ithaca, N. Y., in 1897. The next year he received his degree of Bachelor of Law Cum Laude from the New York Law School, and in the same year was admitted to the bar, at the age of twenty-one. After practicing law for a short time he went abroad for post graduate course, which was taken at Balliol College, Oxford, England, and at the University of Heidelberg, Germany, and other foreign countries, with the idea of going into the diplomatic service. However, the sudden death of his father, Mr. Tom Connolly, in December, 1903, placed him as executor of the estate and at the head of his father's carriage business, and since that time he has been mainly occupied in the manufacture of landaus, broughams and automobile bodies for the custom trade, always adhering to the same strictly high class line of work that has been attached to the name of Connolly for over half a century.

Mr. Connolly is vice-president of the Dubuque Fire & Marine Insurance Company, one of the largest institutions in the Middle West. He is also a director and on the examining board of the Iowa Trust & Savings Bank, the principal banking institution of Dubuque. He is the secretary and treasurer of the Julien Hotel Co., as well as of the Bank & Insurance Building Co., and is also on the board of other Dubuque industries.

In spite of Mr. Connolly's many duties, he still takes time for recreation. He is president of the Dubuque Club, which is the leading town club, and is also president of the Dubuque Golf and Country Club, the principal social organization of Dubuque. He has won both the golf and tennis championships of this latter club. He is a member of the new University Club of Chicago, and has served as president of the National Convention of the Delta Kappa Epsilon Fraternity. He has also on different occasions made addresses at the dinners of commercial clubs.

Mr. Connolly is single and lives with his mother and two sisters.

CINCINNATI CARRIAGE MAKERS' CLUB ADOPT RESOLUTIONS.

The Cincinnati Carriage Makers' Club, Cincinnati, Ohio, at their April meeting, unanimously adopted the following preamble and resolutions:

"On Tuesday, March 23d, at Amesbury, Mass., died John Hassett, president of the Carriage Builders' National Association.

"Through his many years' connection with the association, he had become known to and respected by members of the carriage industry in all sections of our country, and endeared himself to those intimately associated with him.

"His genial social qualities, his cheerful and kindly disposition, has made him friends wherever he had formed acquaintances.

"Having served for years as a member of the Executive Committee, he was elected as its chairman, and last October was unanimously chosen as president of the Carriage Builders' National Association.

"His worth having been thus recognized by his associates, having attained to the highest official position in his work, in the prime of life and in the fullness of his opportunity to prove his excellent qualities, he was removed by death, to the loss of the association and the regret of his many sorrowing friends. Therefore, be it

"Resolved, That as it has pleased Almighty God in his wisdom to remove him from his work among us, may his example be an incentive for greater activities in performing our duties, kindlier feeling towards each other, and loftier purposes in our business lives. Be it further

"Resolved, That in his death the carriage industry has lost a zealous friend and one of its most useful members, and the National Association a most active and honored official, a wise counsellor and an earnest worker. Be it further

"Resolved, That the Cincinnati Carriage Makers' Club extend their deepest sympathy to his relations in their bereavement, and that these resolutions be spread on the minutes of our club, and a copy be sent to his brother, and the secretary of the Carriage Builders' National Association and the trade journals.

(Signed), "Jas. F. Taylor,
"A. G. Brunsman,
"Morris Woodhull."

ROADS AND WHEELED VEHICLES IN JAPAN.

According to an article in the Japan Chronicle, published in Kobe, and transmitted by Consul John H. Snodgrass, the use of wheeled vehicles and the existence of requisite roads therefor in Japan are matters of the last fifty years. Even now they are comparatively rare exceptions, the old method of carriage by pack horses being used everywhere away from the immediate neighborhoods of large towns and the railways.

SUSTAINED 26,000 POUNDS.

The unusual severity of tests required by the makers of the modern motor cars, is shown by the recent experiment of the Chalmers-Detroit "30" car, at the University of Michigan, when the bearing crank shaft was subjected to the remarkable test of holding 26,000 pounds. The crank shaft was supported at the bearing joints upon the crank shaft ends. The load was applied until the thirteen ton mark was reached, and under severe pressure the shaft stood under 30,000 pounds of weight. No such strain could ever be given a car during any road use.

Digitized by Google

The Workings and Interior Views of a Large Carriage Factory

Construction Problems and the Manner of Their Solution, Shop Equipment and Method of Its Handling, Elements in a Buggy and Manufacture of Them

Those who have lived in the West appreciate the fact that Western conditions are particularly trying on the construction of any wagon or buggy. It seems as though each section had some factor present in the year's work which would test the strength of the vehicle to its utmost. In the mountain regions the grades and the rough roads certainly give the requisite amount of hard usage to anything which runs on wheels, while in the prairie regions the bottom is likely to drop out of the roads for several months in the year and the thick, sticky mud drags on the vehicle until every part is tested to its utmost.

Construction which might serve admirably for Eastern conditions is totally useless in the West, and hence the greatest possible care has to be used not only in the selection of material but in each part of the manufacture. The parts must be made accurate and strong, every part designed to last and wear.

These are the conditions which the buggies were designed to meet, and the factory has been laid out to produce high-grade material of this character with the least possible waste of both labor and material. All parts which will not pass inspection are ruthlessly scrapped. The writer was surprised to see how rigid this inspection is in the case of bent wood seats and other difficult parts of the work.

Preparation of Stock.

The lumber as it is purchased is brought in on trucks on the transfer table, shown in Fig. 3. These trucks are then introduced into the dry-kilns, five in number, which are situated across one end of the main machinery floor. These kilns are provided with the usual steam heat and circulation systems and are also so arranged that they can be sprayed with water to prevent the material from surface drying and checking.

The stock in each kiln is watched very carefully, and if it is drying too fast at the surface a small amout of spray is used. The dry-kiln doors are of frame construction and hinged as shown. When the material goes from the kiln the car is put on the transfer table and run to the place in the room which is

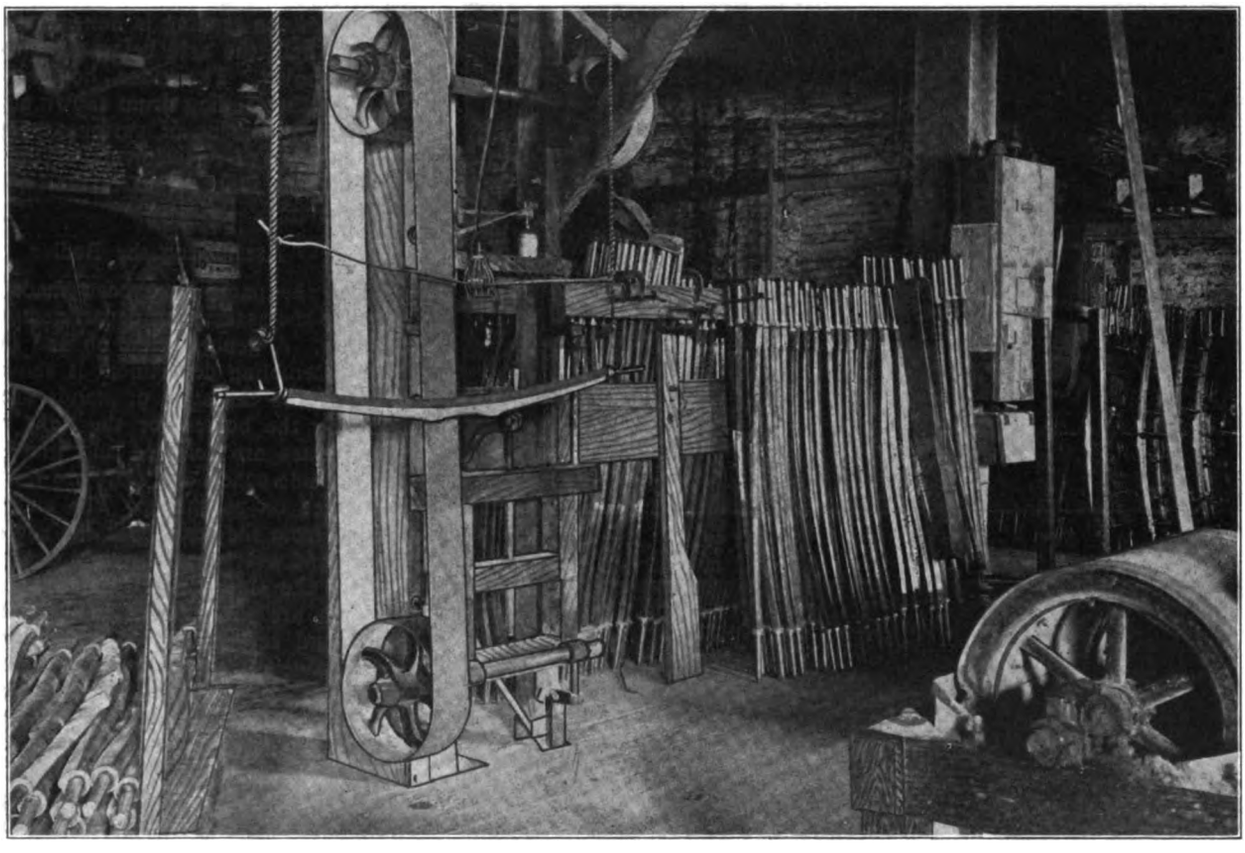


Fig. 1.—Equipment for Sanding Axles.

Digitized by Google

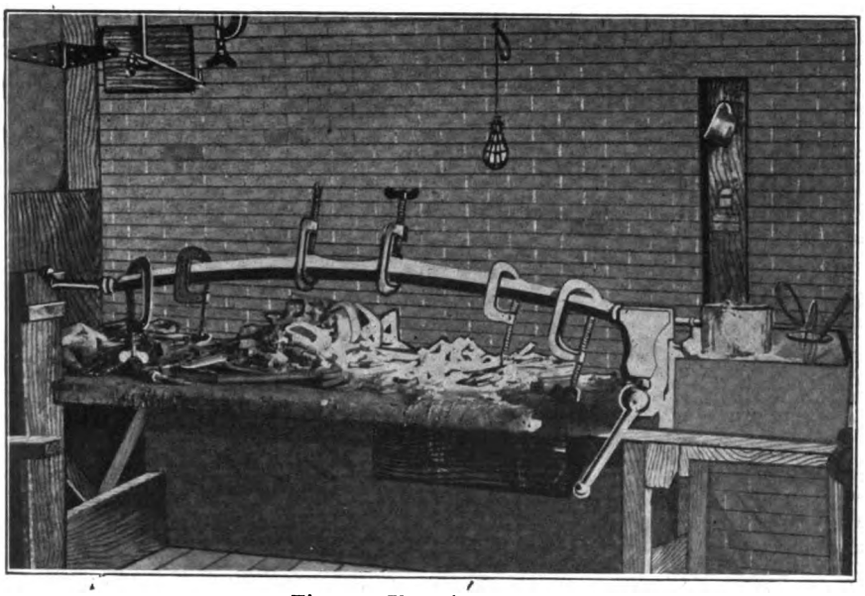


Fig. 2.—Clamping Wood to Axle.

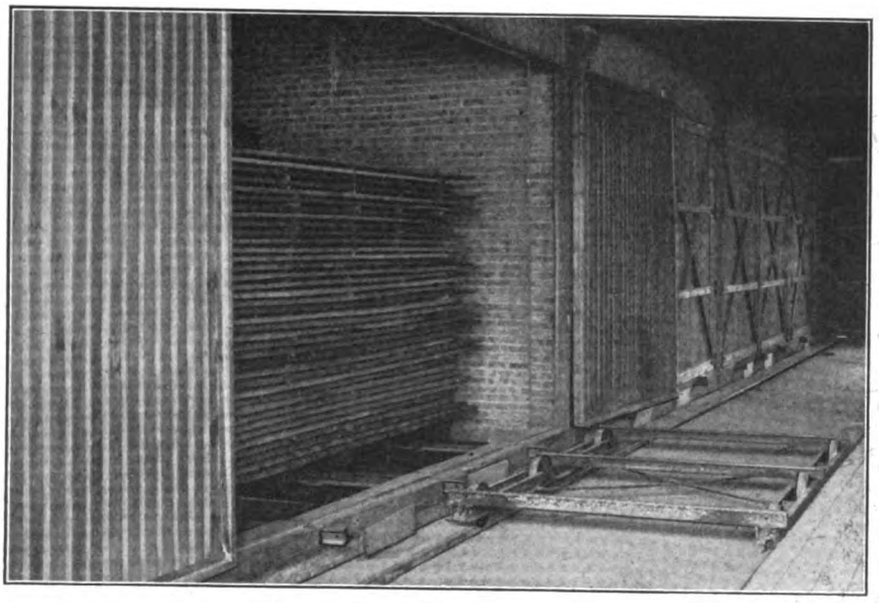


Fig. 3.—Dry Kilns and Transfer Car.

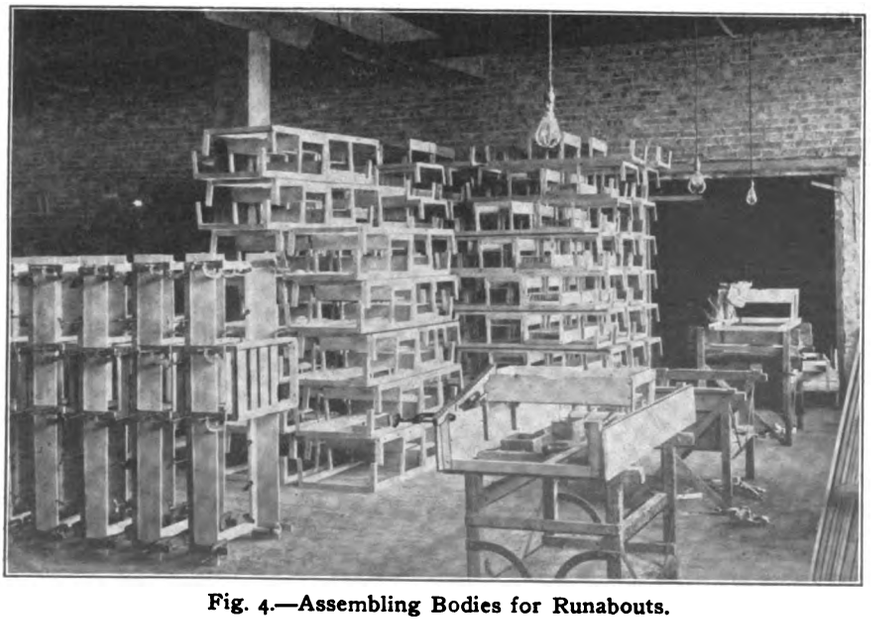


Fig. 4.—Assembling Bodies for Runabouts.

nearest to the machine upon which the stock is to be worked up.

Plant Equipment.

The equipment consists of the usual line of rip-saws, cross-cut saws of various types, re-saws, tenoners, jointers, planers, shapers, etc. The stock is gotten out roughly to dimension in the first department, and then passes to the succeeding department, each department being specialized.

To describe each department in detail would take up a great deal of space, and as much of the machinery is standard and familiar to those interested in woodwork, only a few special features have been chosen for illustration.

Fitting the Axles.

In Fig. 2 is shown the clamping of the wood backing to the axle. This wood is secured to the axle with a special cement and clamped in place as shown. The wooden backing is made 1-16 inch wider than the axle, and after the cement has set the superfluous wood and glue along the joint are dressed off roughly with a draw shave or rasp. The axles are then sanded as seen in Fig. 1.

Most of the sanding is done on the vertical sanding belt, the axle being supported in the hooks shown. The sides, however, are finished on the sanding drum shown at the right. Sanding equipment of various types is used in a number of departments of the shop for finishing the different parts that go to make up the buggy.

Assembling the Bodies.

After the parts have been made they are taken to the assembling departments to be put together. A general view on one side of the body assembling department is shown in Fig. 4. It shows the style of stands used for assembling the bodies for the light runabouts. The frames are screwed and glued together and the side panels and seats are then clamped and glued on as shown. The end posts are located from the seats with the use of special guides and every part brought to a standard.

After the side panels have been glued on, the ends are trimmed off and the end panels glued and screwed in, in a similar manner. Another view in the body department is shown in Fig. 5. In this illustration the bodies for the surreys are depicted as they are being mounted. It will be noted that the frames for supporting the work are fitted specially for the work which is to be performed upon them. Each man is provided with a bench close to his mounting frame. As soon as the bodies are completed in the mounting department they are sent to the finishing department, which will be described later.

Mounting and Finishing.

The seats are mounted and finished in like manner, Fig. 6 showing two of the seat mounters at work. The various styles of seats are mounted on different frames arranged to hold them while the parts are being clamped and glued in place.

After the seats and bodies are completed

Digitized by Google

and sanded, they are taken to the finishing department, where they receive several coats of filler and body paint. They then go to the first rubbing floor, which is shown in Fig. 7. Here the parts are rubbed down with pumice-stone and water to a perfect surface. The bodies in being moved from one department to another are handled on special trucks, one of which is shown in the foreground in Fig. 7.

The floors are arranged so that the water all drains to a gutter at the rear next to the windows. After rubbing, the parts are painted, then rubbed down again with felt and suitable rubbing material. They are then given another coat of varnish and rubbed once more to give them the final finish. In all, the bodies receive seven coats of paint and varnish and three rubbings.

Wheel Racks.

The wheels are finished in a similar manner and are varnished on special stands, as shown in Fig. 8. Particular attention is called to the wheel rack shown in this illustration, which is used to take the wheels from one department to another, the wheels being supported by the rim, so that the finish of the wooden portions is not affected in any manner.

Details of Covers.

The covers for the seats are finished separately by assembling on special dummy seats as shown in Fig. 9. The style of seat shown with this illustration have ordinary wooden bows for supporting the tops, but the front and back bows are reinforced on the inside so as to stiffen them and prevent the bow from sagging back in the middle, due to strain on the top. Each little detail of the equipment receives similar attention.

On the erecting floor at the time of the writer's visit there was a buggy which was being finished for one of the salesrooms in the West. All of the wooden portions were left in the natural wood, the body simply being varnished, and it was a remarkable sample in that it showed the accuracy of the fit in each joint and the character of the wood used throughout.

The Hub is indebted to Wood Craft, of Cleveland, O., for the foregoing excellent article, along with illustrations. The plant referred to is that of the Henney buggy factory, at Freeport, Ill., a subsidiary company of the Moline Plow Company.

ADVANTAGES OF WOOD IN AUTO BODY CONSTRUCTION.

The history of automobile body building has shown great evolution. The primitive designs prepared by automobile designers showed no means of accomplishing the shapes, gave no detail working drawings—merely the body in perspective outline—and the manner of acquiring was left entirely to the woodworker or mechanic to whom the work was intrusted.

The first models which contained great swells and tulip shapes, showed the seats accomplished in various ways, conspicuous in

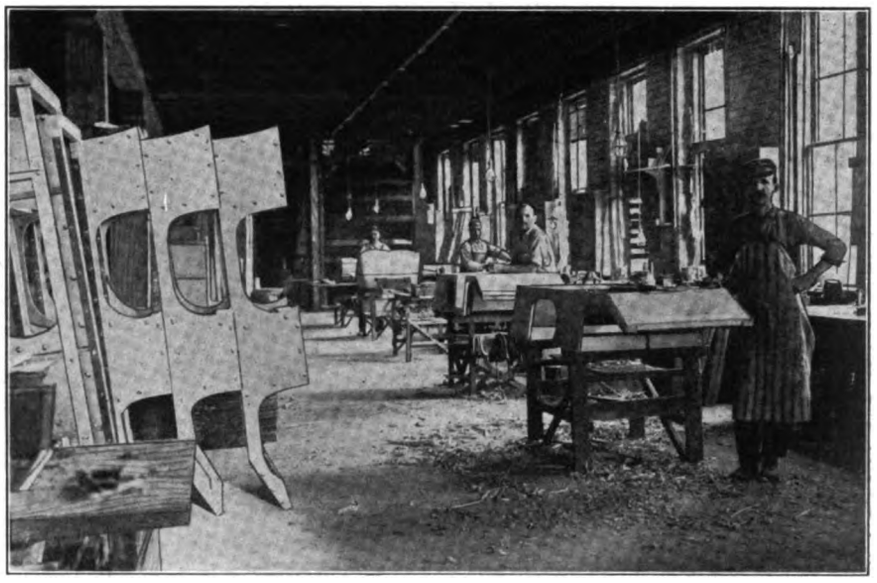


Fig. 5.—Assembling Bodies for Surreys.

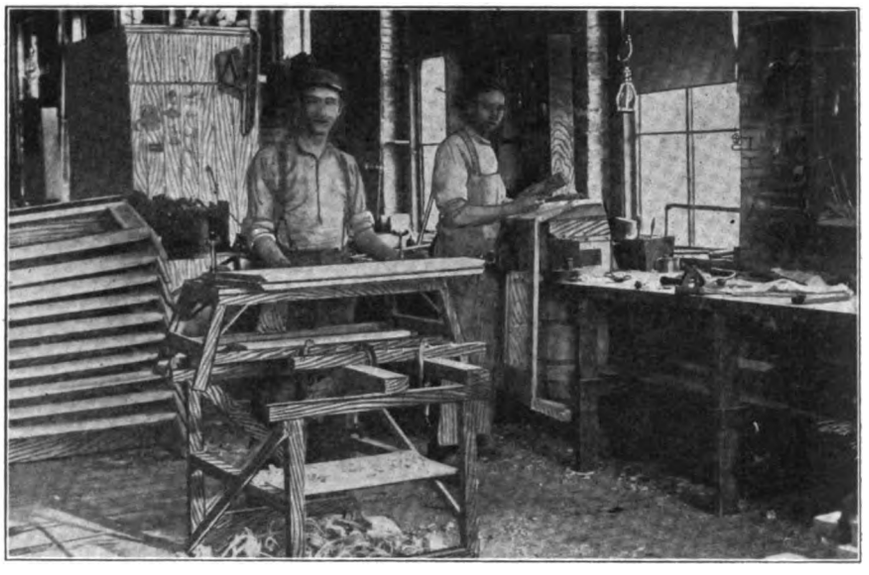


Fig. 6.—Mounting Seats.

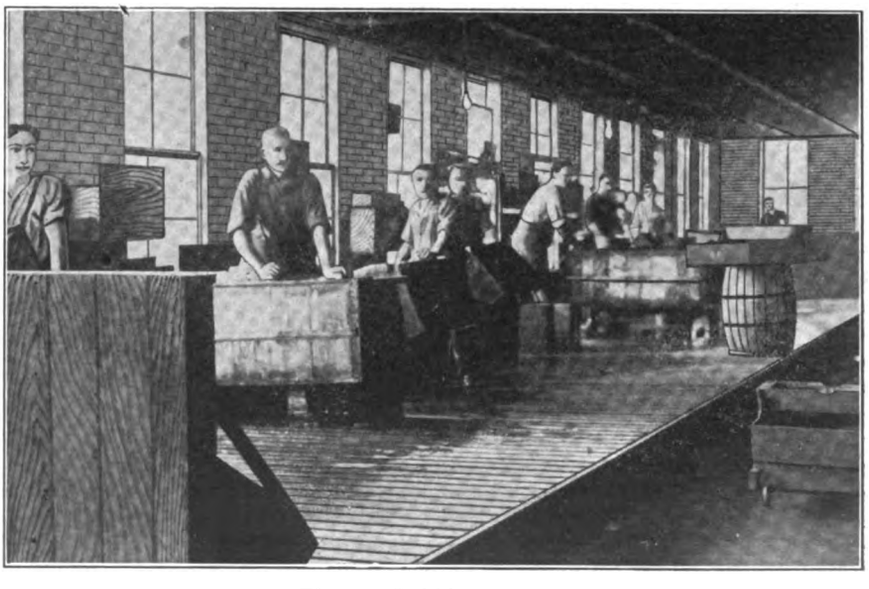


Fig. 7.—Rubbing Floor.

Digitized by Google

these being the old "stave" method, viz., sawing narrow strips to shape and glueing and screwing together. This proved wholly unsatisfactory, because, with every condition perfect, the timber evenly seasoned, and glue joints properly made, the body was in service but a short time until through the finish would appear small cracks, or in some instances by actually opening up, showing the location of every glue joint. Various efforts were made to overcome this; the use of Irish linen or scrim glued over the outside failed to exclude these defects. In some instances bent wood was used in accomplishing these shapes.

In the early models using bendings, these shapes were acquired by bending a wide board over a form with cylindrical corners and cutting down in back to secure the necessary rear flare or pitch to the seat. These made awkward corners, when using large enough radii to make a comfortable seat, and at the same time gave no side flares. It was about this time that bendings were introduced by several firms giving their entire attention to this feature of the work alone, with cone corners and flares at both side and rear, the flares being accomplished in the process of bending.

It is remarkable what a variety of sizes and styles are accomplished in this manner, and the fact that the entire seat shape is accomplished from one piece of wide poplar (easily the best wood adapted to body work), quickly brought this construction into great favor. About this time also the automobile builders dropped the grotesque shapes and refined their body designs by approaching straight and consequently more harmonious and graceful lines. It has been found that the bending of the wood adds to its strength, and by numerous tests both mechanical and by actual wear, bodies constructed with these bendings show remarkable strength and durability. These bendings are generally produced from stock one inch thick dressed to seven-eighths inch and by merely attaching to the seat frame and door pillar, relieve the necessity of expensive frame work for panels or reinforcing to secure the upholstering.

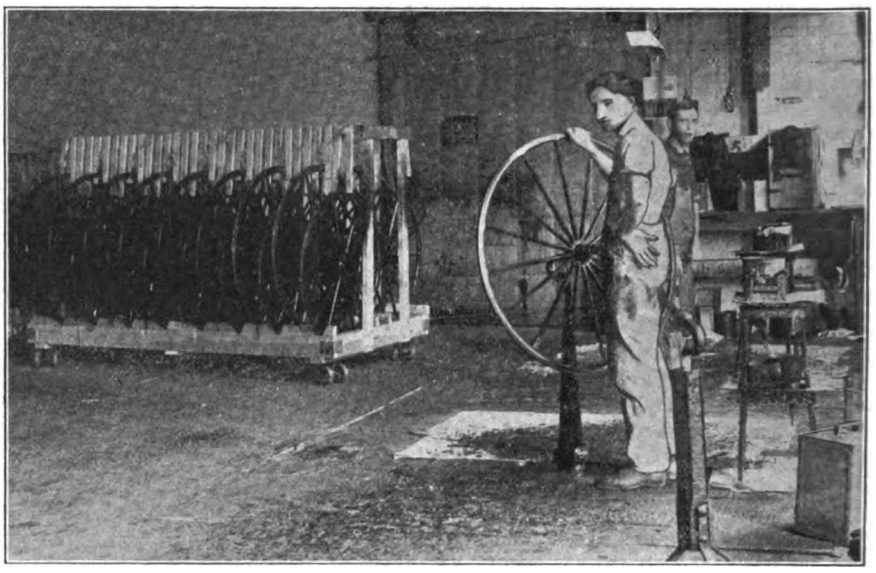


Fig. 8.—Varnishing Wheels.

Fig. 9.—Assembling Tops.

A circumstance favoring the wood construction is the fact that this work, during the growth of the automobile industry, has fallen into the hands of the carriage maker, who from their long experience in building vehicle bodies, were well equipped with adequate facilities and practical knowledge to undertake the work. It seems a natural outgrowth that this is the proper source of supply, and since the introduction of solid bendings there has been little or no cause for complaint.

Various attempts have been made to adopt metal sheets and castings for the seat panels. These at first were attended with considerable dissatisfaction, because of the fact it was difficult to accomplish a finish that would adhere to the metal sheet when subjected to the vibration in motoring and the castings were too heavy to be used satisfactorily, especially since the weight of an automobile has become an important factor. This is true in the case of aluminum castings. Contrary to the general opinion, aluminum of the proper efficiency for automobile panels is much heavier than wood. There has been some improvement made along these lines by giving the metal sheets a facing of aluminum, which gives a more satisfactory surface for receiving the finish. The fact that seats made in this manner are easily dented and punctured, and repaired only at expense of new panel, has detracted from the popularity of this construction.

After short service bodies built in this manner become very noisy, it is because of reasonance of the panels and the fact that the bolts and screws in the body work will rattle and creak, rendering an otherwise practically noiseless car unpleasant to those riding. Metal sheet bodies should be heavily reinforced throughout with wood. An advantage to the automobile owner of wood bodies is the convenience with which accessories can be attached, horns, coat rails, grip handles, lamps, etc., etc. With the wood body these can be attached at any place on the panels with absolute security, whereas, with metal construction, it is necessary to locate the wood sills or frames before attaching or by removing the upholstering and attaching by reinforcing the under side of the panel.

We have made mention elsewhere in this article to the resources of the carriage builder for properly undertaking the work of body building. The experience of the carriage worker has been, in the writer's estimation, of valuable assistance in giving the automobile its present degree of comfort. The slight resilience of wood and its quality to absorb jars and shocks relieves the uncomfortable stiffness of metal construction. For the same reason the wood body will resist injury and in accident can be more easily repaired.

Digitized by Google

Among the Manufacturers

Quit After 45 Years.—After having been in the carriage business at 128 Park street, New Haven, Conn., for over forty-five years, the Seabrook & Smith Company has gone out of business, the machinery, fixtures, etc., belonging to the concern having been sold at public auction.

New Wagon Factory for Des Moines.—The Farmers' Handy Wagon Co., of Saginaw, Mich., will erect a new factory at Des Moines, Iowa. The lease has been closed for the property, 60 x 208 feet, at Eighth and Murphy streets, Des Moines, and a building will be erected at once.

To Manufacture Farm Wagons.—The Billings (Mont.) Foundry & Machine Co., recently organized, will manufacture farm wagons. The company proposes to erect a plant which will cost $50,000. It will consist of two buildings, one to be devoted to the company's foundry business and the other to the manufacture of wagons.

Doing a Record Business.—The Watson Wagon Company, at Canastota, N. Y., report having thus far sold more than double the amount of dump wagons sold during a corresponding period in 1908.

Carriage Manufacturer Mayor.—With the recent change in administration at Huntsville, Ala., a prominent carriage manufacturer, Thos. Smith, becomes mayor, succeeding R. Earl Smith. This is the third term for Thos. Smith. he having previously served two terms.

Changing Jobs.—T. N. Balfour, who for some years has been connected with the Rock Hill Buggy Company, has resigned his position here to accept one as manager of the painting department of the Parker Manufacturing Company, of Suffolk, Va., a concern which manufactures vehicles of all kinds.

Addition to Wagon Plant.—Rudolph Prizendanz is building an addition to the rear of his wagon plant in Camden, N. J. It will be 36 x 47 feet in dimensions and will be erected immediately in the rear of the present building, and will be devoted to manufacturing wagons. It will have duplex concrete piking, which will make it of the most modern pattern for construction and durability.

New Spoke and Hub Works.—A spoke and hub factory is to be established at Heber, Ark., by W. P. Duffus, of the English Lumber Company, of Detroit, Mich.

Will Occupy New Quarters—Trapp & Sons, carriage and wagon makers, Marietta, Ohio, are about to move into a modern building constructed for them, which is four stories in heighth and built of stone and brick and practically fire proof. They will occupy the building exclusively for the manufacture and sale of all kinds of buggies and wagons, including fine delivery wagons, etc. The first floor will be devoted more to the wood workings and will be equipped with all the latest machinery for the building of carriages, wagons, etc. One part of the building will be devoted to a varnishing and finishing room, while upholstering will be done in still another room for that purpose.

Elkhart Co. Makes Pratt Motor Buggy.—The Pratt Motor Buggy is the newest output of the Elkhart Carriage & Harness Manufacturing Company, of Elkhart, Ind. The machine is constructed with an air-cooled engine of sufficient power to propel the car at a rate of from 25 to 30 miles an hour. The firm has been experimenting for many months with various types, and has given the one adopted a thorough testing on the roads before announcing its manufacture.

Velie Co. to Build.—It is almost settled that two more buildings of great size are to be erected by the Velie Carriage and Motor Company, at Davenport,. Iowa. One will be for the carriage shop and one for the auto works. These buildings will almost double the capacity of the company, and plans will be made at once for handling the work.

Business Booming.—The Eagle Wagon Works, of Auburn, N. Y., received orders recently for four carloads of vehicles. This is the largest order received since the dull times started over a year ago. One of the carloads will go to the Pacific coast.

Carriage Business Growing.—The Newburyport (Mass.) News says: Manufacturers of the local carriage factories have taken on a share of this increased prosperity that has come to this town of late. In the auto building factories every one seems to be active. Especially is this true in the trimming out departments. Naturally the great demand for autos has caused a slump in carriages, yet one manufacturer disposed of nearly twenty jobs in a single week very recently. This looks as if the carriage industry were feeling the effects of the better times.

Got a Government Order.—George B. Marx, manufacturer of steel or wood body wagons, trucks, etc., at Greenpoint, Greater New York, recently received an order from the United States Government for fifty pontoon wagons.

Miller Bros. Incorporate.—Miller Bros., of Amesbury, Mass., have incorporated with a capital stock of $50,000 to do a general automobile business, with Thos. C. Miller as president.

Will Build.—Gustave Raetz, of Milwaukee, Wis., will erect a two-story carriage factory on First avenue near Park street.

Buggy Factory for Calidonia.—A number of capitalists from Cleveland have been looking over ground for a suitable location to start a buggy factory at Calidonia, Ohio. The new company is to be known as the Calidonia Carriage and Vehicle Company, and will be incorporated with a capital of $75,000.

Elect Officers.—The following officers of the Dopson & Wolf Carriage Company, at Oneida, N. Y., were recently elected: President, I. R. Frank; secretary, Dana Dopson; treasurer, James Brewers; superintendent, John W. Wolf. The company is now running its plant on full time, and has enough orders on hand to keep its force busy until late in the fall. Several large orders have been received for export shipment.

To Manufacture Steel Parts.—The West Coast Wagon Company, of Tacoma, Wash., have purchased a factory site and will build a plant in which to manufacture the steel parts used by the company in the construction of their wagons. During the past two years the company's business has increased to such an extent that it is necessary to secure additional manufacturing space, and it was decided to move the steel department into a separate building. The property purchased is on what is known as the Tacoma tidelands, in the best manufacturing district, and close to the terminals of the Milwaukee road.

Will Look Swell.—The Shaver Carriage Company, Des Moines, Iowa, are fitting up the entire lower floor of their factory for a sample room. The interior will be finished in white. the office will occupy one corner of the floor.

May Move the Plant.—If negotiations which are said to be practically closed are carried through to completion, the Spears Axle Co., of Wheling, W. Va., will move their plant to Warwood.

Working Nights.—The Bain Wagon Company's factory, at Woodstock, Ont., is being run evenings at present, long hours being made necessary by the large number of orders that are on hand.

Doubled Its Working Force.—The Ashtabula (O.) Carriage Bow Socket Company is enjoying an exceptional boom in business, and as a result has been compelled to double crew its

Digitized by Google

force. This has resulted in the putting to work of sixty additional men, the entire force now consisting of about 140.

Will Build Autos.—The Schurmeier Wagon Company, Minneapolis, Minn., will go into the automobile manufacturing business. The company now manufactures a special business truck. Its engineer has worked out the plan for a light automobile truck which the company will start to turn out at once.

A Two-Story Addition.—The Mandt Wagon Company, of Stoughton, Wis., has begun the erection of a two-story addition to the gear department, which will afford 4,000 additional feet of floor space.

Spreading Out.—Two hundred and fifty additional men will be employed by the Muncie (Ind.) Wheel and Jobbing Company when its new factory building, just contracted for, is ready for occupancy. This building will house an automobile wheel factory. The building itself will cost between $20,000 and $25,000, and will have 40,000 square feet of floor space. The plant will have a capacity of between 40,000 and 50,000 sets of automobile wheels annually.

Gets a Promotion.—Fred G. Letts, factory superintendent for the W. A. Paterson Company, and formerly of the Cortland (N. Y.) Wagon Co., has succeeded to the duties of sales manager of that concern, following the resignation of George McCutcheon, who leaves Flint for Owensboro, Ky., to become vice-president and sales manager for the F. A. Ames Company. Mr. Letts, who has held the position of factory superintendent for the last ten years, will continue to exercise general supervision over the factories of the W. A. Paterson Company, in addition to having charge of the sales department.

Phineas Jones' Plant Very Busy.—One of the busiest workshops in Newark, N. J., at this season of the year is the plant of Phineas Jones, in Market street. Automobile wheels are being turned out there by the thousands and there seems no let up in orders. Contracts for wheels from manufacturers will keep the Newark concern running to capacity through November.

Building an Annex.—Peter McGovern is building an annex to his carriage repository and manufactory at Lowville, N. Y. The new building will be three stories high and will contain about 4,000 square feet of floor space. This added to what he has now in use will make approximately 15,000 square feet.

Wheel Works for Hamilton.—The Franklin Wheel Company is the title of a new industry that promises to put Hamilton, Ohio, in the front rank of wheel factories. The new concern is a $50,000 incorporation. The incorporators are: J. J. Weisner, George McLane, H. S. Coonver, C. F. Thirkield, S. S. Tibbals.

Will Move Plant to Omaha.—T. F. Stroud & Co., of Omaha, Thomas F. Stroud, being "president, general manager and board of directors," as he puts it, has bought the plant of the Harrison Wagon Company, located at Grand Rapids, Mich. Mr. Stroud will move the plant to Omaha at once. The Harrison Company has been employing about 200 men.

Sale of Keystone Wagon Works Confirmed.—A reorganization was effected by the Keystone Wagon Works April 10. The court, on motion of J. Bennett Nolan and Joseph R. Dickinson, made absolute the rule in the application for an order of sale granted Receiver John L. Coxe, to show cause why the plant should not be sold to George Brooke, Jr., of Birdsboro. The latter paid $40,000 for the plant, which the receiver deemed a better price than could be realized at public sale.

Albert B. Harvey Bankrupt.—With liabilities amounting to over $7,000, Albert B. Harvey, of Des Moines, Iowa, manager of Deere & Co., the Deere & Mansur Co. and the Moline Wagon Co., all implement concerns, declared himself to be insolvent in a petition filed with W. C. McArthur, United States commissioner, asking to be adjudged a bankrupt. He lists his assets at $299.

Proud of Its First Baby.—A handsome new motor delivery van is fast approaching completion at Brownell & Burt's carriage manufacturing plant at Taunton, Mass. The vehicle is run by a powerful motor, and is the first of its kind that has been constructed in that vicinity.

Built an Electric.—The Champion Wagon Company, Owego, N. Y., built an express truck with electric motor attachment and had it on display April 28.

St. Louis Carriage Builders to Make Autos.—One by one the carriage builders of St. Louis are turning their attention to the construction of automobiles. It is reported that the old carriage building establishment, The Embree-McLane Co., intend to build automobile bodies and handle automobiles. They will buy the chassis and finish the job. Hass & Bohle, of Laclede avenue, old carriage makers, have built a shop and are seeking trade in the auto line.

RECENTLY GRANTED PATENTS OF INTEREST TO THE CARRIAGE TRADE.

913,250—Driving Mechanism Support for Automobiles. E. W. M. Bailey, Amesbury, Mass.
913,251—Detachable Securing Means for Tires. J. Baker, Pasadena, Cal.
913,252—Detachable Securing Means for Tires. J. Baker, Pasadena, Cal.
913,253—Detachable Securing Means for Tires. J. Baker, Pasadena, Cal.
913,254—Detachable Securing Means for Tires. J. Baker, Pasadena, Cal.
913,349—Vehicle Suspension. E. Batault and A. Gardy, Geneva, Switzerland.
913,257—Traction Wheel. D. L. Brownfield, assignor of two-thirds to J. and R. Brownfield, Farmer, Wash.
913,100—Vehicle Axle Spindle. L. Burg, Dallas City, Ill.
912,988—Vehicle Spring. A. Carpenter and C. C. Kisselle, Findlay, Ohio.
913,198—Automobile Steering Device. J. Carter, Norwalk, Cal.
913,623—Variable Speed Gear. G. J. Dallison, Ottawa, Ontario, Can.
913,272—Automatic Wagon Brake. J. C. Dunham, Oklahoma, Okla.
913,494—Steering Mechanism for Motor Vehicles. E. R. Halsey, South Orange, N. J.
913,135—Dump Wagon. W. H. Hill and H. B. Wright, Chicago, Ill.
913,396—Shock Absorber for Vehicles. C. M. Kentsinger, St. Louis, Mo.
913,295—Vehicle Tire. W. A. Koneman, Milwaukee, Wis.
913,522—Automobile Wheel. E. S. Lea, Trenton, N. J., assignor, by mesne assignments, to R. Wolstenholme, Philadelphia, Pa.
913,219—Vehicle Wheel. T. Midgley, Hartford, Conn., assignor to Hartford Rubber Works Company.
913,220—Tire. T. Midgley, Hartford, Conn., assignor to Hartford Rubber Works Co.
913,534—Carriage Body. J. C. Moon, assignor to Moon Brothers Carriage Company, St. Louis, Mo.
913,537—Carriage Body. S. A. Moore, assignor to Moon Brothers Carriage Company, St. Louis, Mo.
913,668—Vehicle Spring. R. Mulholland, deceased; O. B. Mulholland, administrator, assignor to Mulholland Company, Dunkirk, N. Y.
913,539—Shaft Detacher. C. Murphy, Crafton, Pa.
913,043—Rubber Tire Repairer. J. M. Padgett, Topeka, Kan.
913,237—Wagon Box. W. F. Rodebaugh, Cedarville, Ill.
913,066—Wheel. J. Soss, New York, N. Y.
913,247—Automatic Vehicle Shaft Holder. A. Wetzel, Evansville, Ind.
913,084—Rear Axle Transmission Mechanism for Automobiles. M. L. Williams, South Bend, Ind.
913,342—Automatic Wagon Brake. W. E. Woods, Griffin, Ind.
913,608—Attachment for Vehicles. C. A. Zachow, Fortville, Ind.
913,806—Thill Coupling and Support. A. E. Brown, Brookfield, N. Y.
914,334—Transformable Vehicle Body. T. H. Buff, Oyonnax, France.
914,111—Vehicle. T. V. Buckwalter, Altoona, Pa.
913,945—Thill Coupling. F. Dean, assignor of one-half to H. O. Davis, New Castle, Pa.
913,882—Wagon Reach. S. O. Frantz, assignor of one-half to E. J. Frantz, Conway Springs, Kan.
914,036—Cushion Tires for Vehicle Wheels. B. F. Fry, La Crosse, Wis.
914,263—Attachment for Buggy Tops. P. Y. Fullerton, Moore, Tex.
914,141—Protective Device for Rubber Tires. H. W. Harding, New York, N. Y.
913,897—Tire Tool. W. James, Birkenhead, England.
913,470—Wagon Dog. E. Law, New Concord, Ohio.
914,157—Dump Wagon. W. H. Moore, Springfield, Ohio.
913,842—Shaft Tug. F. T. Overman, assignor of one-half to J. T. Lewis, Chicago, Ill.
913,846—Mixed Drive for Auto Vehicles. H. Pieper, Liege, Belgium.
913,850—Air Tube of Tires. J. Rees, Cardiff, England.
913,769—Spoke Lathe. L. G. Robinson, Newport, Ky., and J. J. Meyers, assignors to J. A. Fay & Egan Company, Cincinnati, Ohio.
914,212—Vehicle. N. C. Whiting, Gloucester, Ohio.
914,480—Swaging Machine for Vehicle Axles. F. M. Caesar, Rice Lake, Wis.
914,481—Tire for Vehicles. R. B. Calcutt, Austin, Ill.
914,551—Wheel Tire. J. Christy, Akron, Ohio.
914,553—Thill for Wagons, Carriages, etc. W. H. Cooley, Brockport, and H. E. Marks, Poughkeepsie, N. Y.
914,555—Thill for Carriages. W. H. Cooley, Brockport, and H. E. Marks, Poughkeepsie, N. Y.
914,390—Mud Guard. J. X. Davis, St. Louis, Mo.
914,557—Wind Shield for Vehicles. F. A. Dillingham, Norwalk, assignor to Troy Carriage Sun Shade Company, Troy, Ohio.
914,933—Motor Vehicle. N. S. Dunaway, assignor of one-half to W. T. Johnson, Helena, and C. L. Spain, Birmingham, Ala.
914,710—Vehicle Wheel. P. Ebner, Columbus, Ohio.
914,712—Anti-Skidding Device for Wheels. E. C. Gardner, Montreal, Quebec, Canada.

Copies of above patents may be obtained for fifteen cents each, by addressing John A. Saul, solicitor of patents, Fendall Building, Washington, D. C.

Digitized by Google

SPECIAL TRADE NEWS FROM MICHIGAN

Newsy Notes by our Correspondent Concerning Well Known Carriage and Automobile Manufacturers in the Wolverine State.

Claims to Be All Its Name Implies.—The new Blessing spring automobile wheel was exhibited recently for the first time in Jackson at the Industrial fair. A difficulty in wheels to overcome has been that of tires and punctures of the inflated type of tire. A solid tire on the regular automobile wheel has not always proved satisfactory, because of rigidity, but the Blessing wheel, with springs which respond only when called upon by the uneven and bumpy road, or pavement, the inventor claims, has proved itself a practical device. The comfort of the inflated tire is said to be combined with a serviceable and reasonably priced wheel and tire. It is claimed for the Blessing spring auto wheel with solid tire that one tire will wear as long as the auto itself, and the cost of the tire and wheel will about equal the cost of one outer casing and inner tube of the inflated tire. Mr. Blessing has also invented a number of railway devices.

New Carbureter.—After several years of experimentation, Harley Cogswell, of Grand Rapids, has perfected and placed upon the market a new carbureter, for which application for patent has been filed. In the new carbureter Mr. Cogswell declares that he has overcome the feature in ordinary carbureters which caused him to begin his experiments. The main feature of the new carbureter is a double attachment for both air and gasoline. While the ordinary carbureter has but one adjustment for gasoline and one for air in the regulation of speed, the Cogswell invention has two adjustments for gasoline and a like number for air, adapting itself automatically to all speeds of the engine. The new attachment, it is claimed, has been given thorough trial on various makes of cars and found to work satisfactorily. To date twelve models have been turned out by Mr. Cogswell, but with the success with which it has met a company may be organized before long to place the device on the market.

To Double Capacity of Grand Rapids Plant.—It has been announced that the Chalmers-Detroit Motor Co. has decided to double the capacity of its Grand Rapids plant. A new building, an exact duplicate of the present building, will be erected in time for occupancy, September 1. It will be 60 feet wide, 400 feet long and three stories high, and of concrete construction. It is expected that, as a natural sequence of this expansion of the factory, the company's 1910 output will be considerably larger than this season, when 3,100 cars are being turned out.

A 300 Per Cent. Increase.—F. R. White, general manager of the Baker Motor Vehicle Co., Grand Rapids, in a recent interview said: "Our sales for the month of March showed an increase of 300 per cent. over the best month in the history of our company, and even though we have largely increased our factory force here, we are running day and night, endeavoring to turn out cars fast enough to supply the remarkable demand."'

Preparing for a Busy Season.—The Reliance Motor Truck Co., of Owosso, denies that it is going to erect another large building this summer, although it is laying in much new material and preparing for a busy season.

Increases Capital.—The Guy L. Sintz Engine Co., makers of gasoline engines, Marshall, Mich., has increased its capital stock from $10,000 to $15,000, the additional money to be used for further purchases of equipment made necessary by increased business. A new factory will be erected during the summer.

Auto Gospel Wagon.—Michigan is getting to be the prize state for the output of freak vehicles. Each year in the automobile business or the carriage trade, the commercial truck is put to some new use. The Rapid Motor Co., of Pontiac, is one of the manufacturers of commercial trucks which undertakes to get up a rig of any conceivable design—no matter how unique. The latest being built by this concern is something brand new in gospel trucks. Vehicles along this line there have been, but never another like this one. The machine is being constructed for a prominent evangelist and will be used for touring the southern states. The auto gospel wagon is finished in olive green and has a pulpit at the rear, leaving plenty of room at the front for an organ and choir.

Reo Motor Car Co. Activity.—When the present plans of the Reo Motor Car Co., of Lansing, are carried into effect, that city can boast of one of the most modern and up-to-date auto factories in the world. At a recent meeting of the officers and stockholders, it was voted to increase the capital stock $1,000,000, and with the additional money to begin the erection of new buildings and the enlargement of the old ones, during the approaching summer. At least a quarter of a million dollars will be spent in this way. When the addition to the factory is completed, it will give 80,000 square feet additional floor space. The company at present is delivering about fifty autos a day and expects to ship out at least 6,500 by the close of the season. In other words, the company is producing a complete car every twelve minutes of the actual working day. At the St. Catharines, Ont., branch of the Reo Company a large force of men is now employed and the season at that place promises to be a most productive one. That factory was started about four months ago, practically all of the stock being owned by Lansing capitalists. A greater portion of the Canadian trade is supplied from the Lansing branch, and another year it will probably be necessary to increase its facilities. Next year the majority of the machines sent out from the Reo shops will be of the four-cylinder variety and will retail at popular prices.

R. E. Olds Honored.—Announcement has been made that R. E. Olds, of the Reo Motor Car Co., of Lansing, has been named chairman of the show committee of the American Motor Car Manufacturers' Association, which will hold its tenth annual show at Grand Central Palace in New York.

Astonishing Pay Roll Figures.—High water mark was reached in the pay rolls of the Pontiac factories for the week beginning April 5, there being paid out in wages the total sum of $26,000. The automobile industry was chiefly responsible for this. Three big automobile factories are doing their full share of business, and two big body plants are working up to the limit, largely on automobile bodies. Most of the bodies manufactured in that city are also trimmed and painted there, giving rise to another industry which, at the present time, gives employment to 150 men. The present outlook for the continuance of business and the increase of prosperity is reassuring. The record in wages above mentioned is $6,000 higher than the previous one. Compared with a year ago, the figures are astonishing. It means that in twelve months the total of the pay rolls has been trebled.

To Organize New Auto Top Company.—Capitalists of Pontiac are about to organize a company for the manufacture of automobile tops. Plans have not been definitely formed, but the increased and growing demand for auto accessories of all kinds has given rise to the proposition now being promoted. It is proposed to float a company of $15,000 capital, select a site for a building and start the factory with fifty operatives. This

Digitized by Google

number it is hoped to increase as the business demands. The recent growth and development of the Auto Top and Buggy Co. illustrates the possibilities in all branches of the auto accessory trade in the Michigan field. This last mentioned concern now gives employment to 250 men, and has all the work it can attend to.

Looking for a Site.—Howard O. Carter, of Detroit and Washington, D. C., recently visited Ann Arbor with a view to locating a big automobile plant there for the manufacture of his Carter twin engine cars, of which he is the inventor. Mr. Carter stopped off and looked over his factory at Hyattsville, Md. While there he applied for three new patents on his twin engine invention. It is reported that Mr. Carter will locate his new plant near Detroit, on a railroad that has overnight freight delivery, in addition to adequate interurban service. Mr. Carter is also president of the Carter International Auto Mfg. Co., of Detroit, that controls foreign rights on his twin engine cars.

Railroad Track Auto.—An inspection car—the only one of its kind in this country, and probably in the world—has been built at Escanaba for W. B. Linsley, superintendent of the peninsula division of the Chicago & Northwestern Railroad. It is an automobile of the touring car type, so changed in various particulars as to run on the railroad tracks. The pneumatic tires have been taken off and steel flanges placed on the wheels, the rims fitting over the rails and the steering gear clamped so as to be immovable. The car has a 22 horsepower engine and can make fair speed.

To Push Gas Engine Plant Construction.—Ground has been broken for the new $1,000,000 engine plant of the General Motors Co., to be located just north of the large group of buildings of the Buick Motor Co., in the north end of Flint, on 67 acres of land reserved for that purpose. W. C. Durant has given explicit orders that the building should be started at once and pushed to completion.

Means Much to Lansing.—The Olds Gas Power Co., of Lansing, has signed a contract to build motors for the General Motors Co., the first order being for 4,000. This may ultimately result in the capital city becoming the greatest gas engine center in the country. It will mean the furnishing of the General Motors Co. with 50,000 engines a year, it is said; the enlargement of the Olds Gas Power Co.'s plant to practically double its present capacity; the ultimate employment of approximately 4,000 workmen; the immediate erection of a $20,000 stock room, to be followed by the construction of several more buildings, including a testing room, the whole to cost possibly millions, including equipment, and the expansion over an area of 24 acres. The signing of the contract calls for the manufacture of motors to be used by the General Motors Co. and of all the plants that the General Motors Co. controls, or may hereafter acquire, but the present motor plant of the Olds Motor Works will continue in operation and the proposed enlargement of the plant at Flint will progress.

A Banner Month.—The output of the Buick Co. for last month was the largest in its history, or 2,135 machines of different models.

Lands a Buffalo Concern.—Detroit has landed a Buffalo, N. Y., industry, the Buffalo Carbureter Co., which is already beginning to move its machinery from the present plant in Buffalo to a factory building at Stanton and Grand River avenues. The company will open with about 100 hands, many of them skilled mechanics, who will remove here with their families. The concern, as its name indicates, manufactures carbureters and automobile accessories. The officers are: William F. White, president, and Robert A. Heussler, secretary, both of whom will live in Detroit.

New Works for Escanaba.—The Escanaba Veneer Works, of Escanaba, is being organized by T. M. Judson, manager of the Escanaba Mfg. Co., and C. T. Tuxford, of Jamestown, N. Y. A special building will be erected, 210 by 60 feet. Several smaller buildings will be put up later.

Brass Business Booming.—The automobile industry has boosted the brass business in Grand Rapids to a marked degree. There are now five plants in that city making brass castings, and there are several other concerns that finish and make up brass, almost an industry by itself. Few of the automobile manufacturers have the essential equipment to produce the brass parts used, and many of them are now looking to Grand Rapids for their supplies. This city also is an important center for gasoline motors, thus giving the brass industry still another boost.

Extending His Business.—Chas. Whitton, carriage trimmer and auto tops, has bought property on Grand avenue, Menominee, and will extend his business.

Big Ice Wagon Order.—Caldwell & Loudon, of Traverse City, are filling an order for twelve ice wagons to be used in southern Michigan. These vehicles weigh from one to three tons, and have a capacity of from four to ten tons. They are made of the finest Grand Traverse white oak. One of the largest wagons ever turned out by this firm was sent out recently. It was a 2,500-pound vehicle, and will carry a load of household goods easily. It has a six and one-half foot bed and is 14 feet long. The wheels are small and set far under the body of the wagon, which has a capacity of five tons.

New Incorporations.—Articles of incorporation have been filed as follows: Postal-Doherty Auto Co., Detroit, $20,000, and Postal-Doherty Taxicab Co., Detroit, $1,000; Auto Top & Trimming Co., Pontiac, increase in capital from $20,000 to $30,000; Guy L. Sintz, gasoline engines, Marshall, increase of capital from $10,000 to $15,000; American Carriage and Wagon Works. Detroit, $1,800.

BADLY DAMAGED BY STORM.

The Henderson-Hull Buggy Factory, at Savannah, Ga., was completely wrecked by a storm the first of May. The top story was blown completely off, and the second story was left with the walls stripped away, the piping torn up. The stock of buggies was left exposed in every direction, and the yard on the northern side of the house was a mass of cement blocks, huge timbers and all sorts of wreckage.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE CARRIAGE TRADE.

Patents Expired March 15, 1909.

470,702—Horseshoe Calk. Wm. Pearce, Plantsville, Conn.
470,764—Blacksmith's Vise. G. R. Moore, New York, N. Y.
470,815—Weighted Horseshoe. C. N. Barton, Cynthiana, Ind.
470,892—Thill Coupling. E. E. Kimball, Peabody, Mass.

Patents Expired March 22, 1909.

471,136—Machine for Trimming the Flash from Axles. W. J. Parmelee, Wilkes-Barre, Pa.
471,199—Thill Coupling. D. W. Tanner, Marlin, Tex.
471,297—Draft Equalizer. E. Wages and S. H. Armstrong, Canton, Illinois.
471,402—Dumping Wagon—Wm. H. Sheldon, Poughkeepsie, N. Y.
471,414—Vehicle Spring. E. H. Booth, Kirkwood, N. Y.
471,503—Anti-Rattler for Thill Coupling. H. V. Appley, Grand Rapids, Mich.

Patents Expired March 29, 1909.

471,643—Neck Yoke. J. F. Kellogg, Mitchell, S. D.
471,690—Thill Coupling. O. T. Welch, Topeka, Kan.
471,781—Vehicle Wheel. G. G. Ward, Camden, N. J.
471,880—Whiffletree. J. B. McCallum, Alfordsville, N. C.
471,933—Vehicle Wheel. J. Arbtin and W. J. Anderson, Des Moines, Iowa.
471,949—Whiffletree Hook. G. Carlson, Sparks, Neb.

Patents Expired April 5, 1909.

472,053—Wagon Running Gear. C. E. Holley, Fort Fairfield, Me.
472,262—Horseshoe. C. Hammelmann, Buffalo, N. Y.
472,280—Vehicle Running Gear. T. Sutherland, Stillwater, Minn.
472,295—Wagon Running Gear. J. M. Holler, Albany, N. Y.
472,476—Thill Support. A. H. Fletcher, Kingsville, Canada.

The above lists of patents, trade-marks and designs of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City.

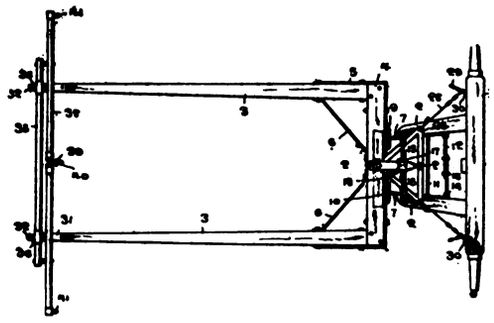
Digitized by Google

RECENTLY GRANTED PATENTS OF INTEREST TO THE CARRIAGE INDUSTRY.

Attachment for Vehicles. Charlie A. Zachow, of Fortville, Ind. No. 913,608. Patented Feb. 23, 1909.

This invention relates to attachments for vehicles, and the object is to provide means for attaching three draft animals to the vehicle.

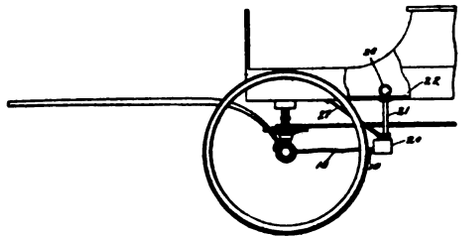
In order to properly guide the vehicle and at the same time provide means for attaching three draft animals thereto, the



inventor has provided a pair of shafts which are secured together at their rear ends by means of a cross bar, the shafts being rigidly attached to the cross bar by extending a strap a distance along the outer edge of each of the shafts and along the rear edge of the cross bar while the opposite sides of the shafts have secured thereto the ends of a brace, said brace being substantially V-shaped and being secured to the cross bar adjacent the longitudinal center of the cross bar, said strap and brace forming a rigid connection between the shafts and cross bar.

Shaft Detacher. Coleman Murphy, of Crafton, Pa. No. 913,539. Patented Feb. 23, 1909.

The object of this invention is to provide a simple device for quickly detaching the shafts or tongue of a vehicle, the device



being positive in its action and free from injury by ordinary use. In operation it is only necessary to pull upwardly upon the rod 26, at which time locking members will be swung to release the shafts.

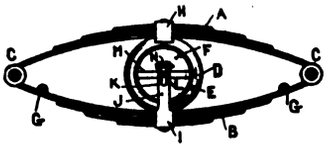
Device for Detaching Horses from Vehicles. Thomas M. Bovard, of Oakdale, Pa. No. 912,646. Patented Feb. 16, 1909.

This invention relates to devices for detaching horses from vehicles, and comprises metallic clip adapted to fit over the end of a whiffletree and in the provision of a pivotal whiffle hook

having an elongated arm adapted to be held against the shank of said clip by means of a sliding fastener, which may be released from said arm, in case of emergency, to allow the whiffle hook to turn upon its pivot to release a trace, each end of the whiffletree being equipped with a similar device with chains or cords connected to the releasing means and positioned within convenient reach of an operator in the vehicle to which the device is attached.

Pneumatic Spring. William Henry Humphreys, of Liverpool, Eng. No. 912,376. Patented Feb. 16, 1909.

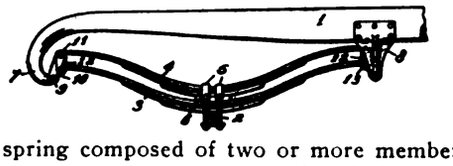
This invention relates to springs, more especially of the kind known as elliptical or bow springs, and has for its object to combine therewith one or more approximately circular hollow



members adapted to be pumped up with compressed air in such manner that while sufficient strength and resilient action is insured in the elliptical spring, this is reinforced and shared and distributed by means of said inflated members.

Vehicle Spring. Michael M. McIntryre, of Cleveland, Ohio. No. 911,151. Patented Feb. 2, 1909.

This invention has for its object to so construct and connect vehicle springs as to secure ease of riding and permit the longitudinal swaying or movement of the body with respect to the axle without detrimental effect upon the springs, as well as to provide means whereby the members of a multiple spring, that

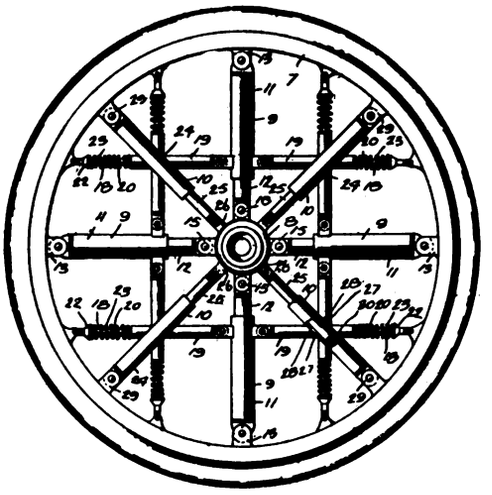


is to say, a spring composed of two or more members, may be connected in such manner as to permit relative movement of the end portions thereof without interfering with each other and to permit such relative movement between the spring members as well as relative movement between such spring members and the body of the vehicle.

Spring Wheel. George A. Gustafson, of Church's Ferry, N. D. No. 911,975. Patented Feb. 9, 1909.

This invention has reference to spring wheels designed primarily for use on motor cars, and it aims to provide a simple and efficient wheel of that type possessed of the requisite lightness, strength and durability.

To this end the invention resides in the provision of a wheel in which the metallic rim is connected to the hub by four main

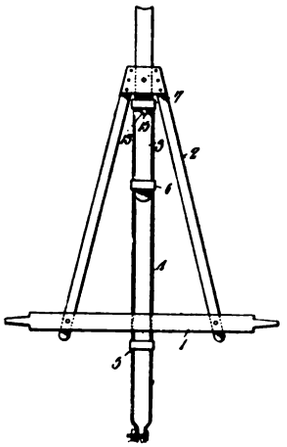


spokes arranged at right angles to each other, and by a similar number of pairs of secondary spokes located between the main spokes, each of the several spokes comprising a pair of telescoping members yieldingly held in position with relation to each by means of coil springs, each of the main spokes being further connected with the rim by a pair of cross-braces disposed on opposite sides thereof and likewise arranged at right angles thereto.

Wagon Reach. Samuel O. Frantz, Conway Springs, Kan. No. 913,882. Patented March 2, 1909.

Digitized by Google

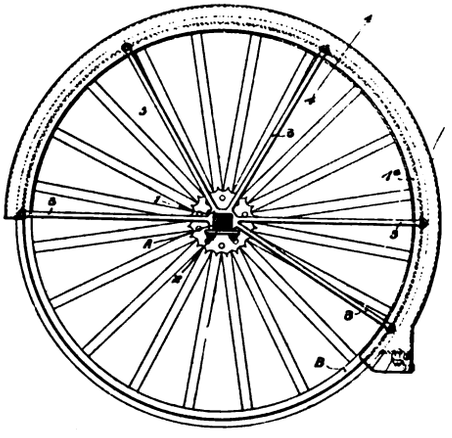
The object of this invention is to provide a reach which will enable one man to control two or more loaded wagons with teams, or to trail two or more empty wagons without teams, thereby to effect a large saving in wages by reducing the number of employees to a minimum. Furthermore to provide a reach capable of securing the above functions and a further one being extensible for the purpose of converting the running gear of a wagon into a hay frame or a lumber wagon. The inven-



tion consists, generally stated, in a wagon reach embodying two sections longitudinally adjustable relatively to each other and embodying means to hold the sections at any required adjustment, and also means for attaching one of the sections to a following wagon pole.

Mud Guard. Joseph H. Davis, St. Louis, Mo. No. 914,390. Patented March 9, 1909.

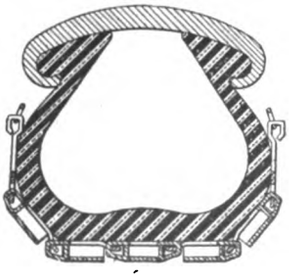
This invention is a mud guard having a mud shaver at its rear end to scrape from the tire any mud which may adhere to it. The guard is of such a length as to prevent any water or



other matter which forms under the mud shaver from flying off into the vehicle.

Attachment for Tire Treads. Frank A. Fox, New York, N. Y. No. 915,842. Patented March 23, 1909.

This invention has for its object to provide a form of anti-

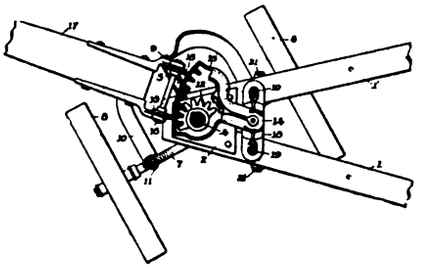


skid attachment for tires that will be of light weight and at the same time will have a comparatively large gripping surface; and which will have rounded bent portions at the inner tire engaging face.

A further object is to provide a construction in which the wearing portions of the device will be suitably reinforced and in which the hinge portions of the links will be protected against wear.

Tongue Truck. John A. Stone, Chicago, Ill. No. 914,466. Patented March 9, 1909.

This invention relates to tongue trucks, the object of the invention being to provide a truck wherein the axle will have a differential angular movement relative to the guide tongue;

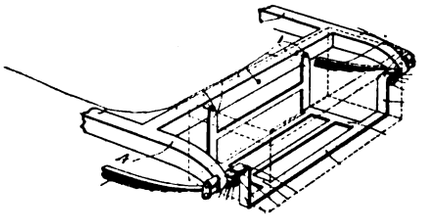


means for limiting the angular movement of the truck axle, and means whereby the range of angular movement thereof may be regulated. The construction and operation of the truck will be obvious from the illustration.

Attachment for Vehicles. Edwin F. Brown, Chicago, Ill. No. 916,529. Patented March 30, 1909.

This invention relates to attachments for vehicles, particularly automobiles.

Baggage supporting frames are usually supplied for automobiles, to which frames, trunks or other baggage are strapped,



the frame being in some manner rigidly secured to the automobile frame. The securing of trunks or baggage to the carrier frame by means of straps is very unsatisfactory, as the trunk or baggage will jar loose and the straps become soiled and ruined and hard to manipulate after a run through wet or muddy weather. The chief objection, however, is the fact that no matter how tightly the trunk or baggage are at first strapped to the frame, they will rattle and shake loose, owing to the jarring and bumping of the vehicle.

The object of this invention is to provide means for securing a trunk or baggage to a vehicle which will at all times hold the trunk or baggage securely in place, and will not allow it to rattle or jolt. The inventor provides a carrier frame which may be rigidly and permanently secured to a trunk or baggage box, for instance, the frame being provided with suitable projections and arms for engaging with parts of the vehicle to be rigidly clamped or secured thereto in such manner that the frame may be readily released and removed with the trunk or box.

The above recent inventions were specially reported for The Hub by C. L. Parker, 908 G street, N. W., Washington, D. C., solicitor of patents and patent causes.

With the advent of large wheels on cars it is interesting to note the distance traveled in one completed revolution of the wheel. A 36-inch wheel will cover 11 1-3 feet in one complete turn, while a circuit of a 42-inch wheel will measure slightly over 13 feet. This is important, as increasing the size of the tires has the effect of increasing the "gear" of the machine.

Digitized by Google

OBITUARY

Curtis L. Kinney.

Curtis L. Kinney, formerly president and general manager of the Cortland Forging Company, Cortland, N. Y., died at Cortland, N. Y., March 31.

He had been in ill health for the past two years, and in January, 1908, retired from active business life, hoping that the release from so many responsibilities would give him an opportunity to recover his impaired health. He was unable to get any permanent benefit, however, and died after a long and painfull illness.

Mr. Kinney was born in McGrawville, Cortland county, fifty-six years ago, and for nearly his entire business life had been

Curtis L. Kinney.

connected with the carriage and accessory lines. He was at one time connected with the Cortland Wagon Company, and later with the Cortland Top & Rail Co. In 1889 he was instrumental in organizing the Cortland Forging Company, and principally through his ability and industry the business has grown from a small local affair to its present proportion.

Mr. Kinney was for years an associate member of the C. B. N. A., and had been present at every convention up to 1908. He had a wide acquaintance among the carriage trade, and his personality was an important factor in securing and holding the same trade year after year.

David McKee.

David McKee, a retired wagon manufacturer, who for many years was active in republican politics in Brooklyn, died of pneumonia April 14 at his home, at No. 382 Flushing avenue, that borough. He was born in 1831, and left a widow, three sons, three daughters, ten grandchildren and six great grandchildren.

Alpheus H. Sears.

The death of Alpheus H. Sears, of the firm of Sears Brothers, carriage dealers, occurred April 13 at his home in Albion, N. Y., aged 73 years, after an illness of several weeks with heart trouble. Mr. Sears was born in Broadalbin, Fulton county, N. Y., March 14, 1836, and in 1840 moved to Albion and later engaged with his father in the manufacture of carriages. After his father's death the business was continued under the firm name of Sears Brothers. He is survived by his wife, one son, Paul, and brother, William, all of Albion.

Thomas C. Pool.

Thomas C. Pool died at his home in Lockport, N. Y., April 2. He was born in Lewiston on July 6, 1838. His grandfather, Achish Pool, was one of the first settlers of the town of Lewiston, and was among those who suffered loss of home during the British and Indian masacre of 1814. For forty years Mr. Pool was engaged in the manufacture and sale of carriages in Lockport. His widow and three sons survive.

Peter Smith.

Peter Smith died April 10 at his home, 233 South Robey street, Chicago. He was born seventy-two years ago. For a long time Mr. Smith had been in poor health and his death was not unexpected. He was the founder of the Peter Smith Carriage Company and had lived in Chicago more than sixty years. He is survived by a widow, a son, G. A. Smith, who was associated with him in business, and two daughters.

Joseph Hibbert.

Joseph Hibbert, aged 76, for many years foreman of the blacksmith shop of the McLear & Kendall carriage works at Wilmington, Del., died in that city on April 6, of heart disease. He was a veteran of the civil war and leaves a wife and three children. He was with McLear & Kendall until the firm went out of business in 1898.

John Kroft.

John Kroft, a retired wagonmaker, 74 years of age, died April 13 at the home of his daughter, Mrs. D. C. Traxler, Ft. Wayne, Ind. He had been ill for some weeks, but was apparently improving until but a day prior to his death. Mr. Kroft was born in Ohio and went to Fort Wayne about ten years ago. He is survived by three daughters and a son.

William Poetter.

Mr. William Poetter, aged 80 years, died April 18 at his home 2124 Eastern avenue, Baltimore, Md., of the infirmities of old age. Mr. Poetter was born in Lengerich, Westphalia, Germany, and came to this country about forty-seven years ago. He was the senior member of the firm of William Poetter & Son, carriage and wagon builders. His wife died about sixteen months ago. He is survived by two sons.

Bernard McCabe.

Bernard McCabe, a native of Pawtucket, R. I., and one of the best known carriage builders in the Blackstone Valley, died April 15 at his home, 68 Sayles avenue, Pawtucket, death coming suddenly. His wife survives.

Wm. Petton.

William Petton, secretary and manager of the Charles Petton Carriage and Wagon Manufacturing Company, died at his home, in St. Louis, Mo., after an illness of several weeks Death was due to heart failure.

David G. Strickler.

David G. Strickler died at his home in Luray, Va., during the past month. He was, up to the time when his health failed, a salesman for the Anchor Buggy Co., of Cincinnati, Ohio, covering the southern territory. Mr. Strickler was born in Page county, Va., in 1856. His widow, who was Miss Mary Fetzer, Columbiana, Ohio, with a son and daughter, survives him.

Amos Miller.

Amos Miller, aged 80 years, one of the oldest pioneer carriage manufacturers in the United States, died April 7 at his home in Bellefontaine, Ohio. For fifty years he was head of the Miller Brothers Carriage Manufacturing Company. He was born in Stark county, Ohio, in 1828, and learned the carriage trade in Cleveland. In January, 1853, he established the Miller Bros. Carriage Co. in partnership with his brothers,

Digitized by Google

David, Samuel and Jacob, in Bellefontaine, the company lasting over forty-five years. They finally turned their factory into a body factory. Upon the dissolution of the Miller Brothers' partnership Amos Miller was engaged for several years in manufacturing automobile bodies together with his son, Huber Miller, but for the past three years he had lived a retired life. He leaves a wife and five children.

A. P. Vogt.

A. P. Vogt, one of the best known and most prominent traveling salesmen of Zanesville, Ohio, died suddenly near his own home, on McIntire avenue, on April 10. He was in the employ of the Peabody Buggy Co., Fostoria. He was 60 years of age.

H. F. Bailey.

Henry F. Bailey, aged 80, for many years a carriage manufacturer of Springfield, Mass., died April 29, after a long illness. He was born in Coventry, R. I., in 1829. He married Miss Hannah Boswell, of Scituate, R. I., in 1851. He moved to Springfield in that year and began work for his brother, C. L. Bailey, afterward entering into partnership with him. Later he was in partnership with a Mr. Moore, and with P. J. Burke, a horseshoer. After 1862, Mr. Bailey conducted the business alone. He made a specialty of heavy wagons and trucks, and by his industry and enterprise amassed a small fortune. Mr. and Mrs. Bailey had five children, three of whom are living.

Lewis T. Matlack.

An attack of pneumonia caused the death April 22, at his home, No. 736 North Twentieth street, Philadelphia, Pa., of Lewis T. Matlack, a well known manufacturer and hardware merchant and veteran of the Civil War. He was indentified with the Keystone Spring Works, the Tioga Foundry Co., and the hardware firm of E. C. Matlack & Co. A widow and four children survive.

MEETING OF WAGON MANUFACTURERS' ASSOCIATION.

A special meeting closing the fiscal year of the National Wagon Manufacturers' Association was held in Chicago, April 27 and 28. The attendance was larger than at any other meeting held during the fiscal year.

After receiving the reports of various officers and committees, the association adopted recommendations covering the standardization of tire lengths in conformity with the already adopted wheel heights.

A very important recommendation was also adopted relating to standard specifications for the manufacture, grading and inspection of wagon spokes. This will not only result in grades being more uniform, but will raise the standard of materials.

The material bureau of the association made an interesting report, showing a complete organization and the formulation of several new plans upon which report will be made later.

The resolution setting forth the necessity of an advance of 10 per cent. in prices, adopted originally in December last and reaffirmed in March, was again reaffirmed without a dissenting voice.

LOWER RATES AFTER JUNE 5.

Shippers of agricultural implements and farm wagons who find it practicable to delay shipments to the Pacific coast until June 5, will find it advantageous to do so. On that date the new trans-continental tariff, which restores the rates in effect prior to January 1, will become effective. These rates are 10 cents per 100 pounds lower than the rates now prevailing.

Last year Sweden's royal forestry commission supplied forest products worth $13,250,000, yet accumulated timber resources equal to twice the amount of the timber felled.

News of the Trade

NEW FIRMS AND INCORPORATIONS.

Olaf Mattson, of Ashcreek, S. D., has put in a stock of implements and vehicles at that point.

The Iowa Wagon Co. has been incorporated with a capital of $25,000, at Shenandoah, Iowa.

American Carriage & Wagon Works, capital $18,000, has been incorporated at Detroit, Mich.

Ionia (Mich.) Wagon Co. has increased its capital from $2,500,000 to $4,000,000.

Joseph Louden, of Wales, has leased the Campbell carriage shop at Palmer, Mass. It will be used in connection with his manufacturing plant in Wales and will be put in operation at once.

J. R. Jackley has opened a buggy and harness store at Barnesville, Ohio.

M. E. Lawrence contemplates building an establishment for the purpose of manufacturing farm and log wagons, at Franklin, Va.

John Smith and Michael Loney have formed a new wagon repair firm, to be known as Smith-Loney & Co., at Youngstown, Ohio.

Walter L. Hegley will engage in the implement and vehicle business at Adell, Wis.

A large buggy and wagon factory is in sight for Lecompte, La. The main building will be 35 x 90, two stories.

I. W. Kimberling will open a carriage repair shop at Atchison, Kan.

John Neiner Carriage Co. has been incorporated with $2,000 capital, at St. Louis, Mo.

V. E. Harris has engaged in the vehicle and implement business at Bartlett, Iowa.

H. W. Hoffman will engage in the vehicle and implement business at Stockbridge, Wis.

The Sperling & Triplett Company has been incorporated at Council Bluffs, Iowa, with a capital stock of $10,000, to deal in automobiles and other vehicles, farm implements, etc. The incorporators are Henry Sperling and B. P. Triplett.

The Western Implement & Buggy Company has been organized at Des Moines, Ia., by J. A. Hosmer and A. K. Irwin. They have leased a building at 216-218 Court avenue, and have a large stock of implements and vehicles ready for spring business.

The Automatic Wagon Brake Company, capital $10,000, has been incorporated at Bartlesville, Okla.

The E. M. Miller Co. has been incorporated at Quincy, Ill., with $50,000 capital, to manufacture vehicles and harness.

The Purchase Wagon Co., with a capital of $10,000, has been incorporated to deal in wagons and saddlery at Richmond Hill, N. Y.

The Model Carriage Co. has been incorporated at Houston, Tex., by Paul Roffall and others, with a capital of $12,000.

The Fredericksburg Buggy Co., J. P. Stiff, president; J. H. Biscoe, vice-president, has been incorporated with $25,000 capital to manufacture buggies at Fredericksburg, Va.

J. D. Cloud is engaging in the buggy and implement business in Canton, S. D.

J. L. Davis is about to begin the erection of an implement and vehicle establishment in Palmer, Neb.

David Aitken will engage in the vehicle and implement business in Lamkin, N. D.

The Armstrong Buggy Car Co. has been incorporated with a capital of $25,000 in Atlanta, Ga.

Frank Chronister will engage in the vehicle and implement business in Heling, Okla.

The Auto Buggy Co. has been incorporated in Norwalk, O., with a capital stock of $100,000.

Digitized by Google

Chas. Garver will open a vehicle store at Bryan, Ohio.

McKenney & Armstrong have engaged in the carriage and implement business in Auburn, Neb.

George Morris has engaged in the vehicle and implement business in Alden, Kan.

The Allen-Fielder Co. has been incorporated in Chicago with a capital of $5,000 to manufacture vehicle accessories.

The Auto Top & Trimming Co., of Pontiac, Mich., has been succeeded by the Auto Painting & Trimming Co.

Calvert & Wilson have engaged in the vehicle and implement business in Ashland, Neb.

S. B. Merritt will establish a carriage and automobile factory in Macon, Ga.

T. T. Warenas is engaging in the vehicle and implement business in Storden, Minn.

Tall & Marsden have established themselves in the carriage and implement business in Edgerton, Wis.

J. W. Herring will erect a buggy manufacturing plant in Aulander, N. C.

George H. Frise succeeds Frise & Pfau, at Odell, Ill. He will handle a complete line of carriages, wagons, implements, etc.

A high-grade carriage repository will be opened by F. W. Pearsall at Baldwin, N. Y. He will also carry harness in stock.

Judson Hill succeeds C. H. Chambers at Williamston, Mich. He will handle a full line of implements, carriages and wagons.

Miller & Lay is the style of a new firm at Zanesville, Ohio. They will handle a complete line of farm machinery and vehicles.

Norman & Corwin are new vehicle and implement dealers at St. Paris, Ohio. They will carry a complete line of popular styles.

O. H. Holmes & Son, of Farmer City, Ill., have purchased the implement and vehicle business of Knight & Son, at Monticello, Ill.

D. I. Criddle will engage in the vehicle business at Oregon, Wis.

Fred Knox has opened a vehicle and implement business at Glenmont, Ohio.

Welsh, Watkins & Welsh, dealers at Springfield, Ohio, have engaged in the automobile business in connection with implements, etc.

The Boise (Ida.) Carriage and Implement Co., of Boise, Idaho, has just been incorporated with a capital stock of $25,000.

The Koontz Hardware Co. has been incorporated at Lexington, N. C., with $4,000 capital stock by E. C. Koontz, F. L. Hendrick, both of Lexington, and E. W. Koontz, of Salisbury, N. C. The company will handle vehicles, implements and hardware.

C. R. Talbott has opened a buggy repository at Troy, N. Y., in the four-story building at 412 South Fourth street, formerly occupied by the Springfield Woolen Mills. He will also handle automobiles.

B. J. Henner Co. has been incorporated at Webster, N. Y., to deal in agricultural implements, harness and vehicles; capital, $10,000.

The Cottler Wagon Manufacturing Co. has been incorporated to manufacture wagons, trucks and vehicles at Brooklyn, N. Y.

The American Oak Wagon Co. has been organized at Roanoke, Va. The officers are: Harry M. Dickinson, Norfolk, president; J. A. Wilkerson, Bristol, vice-president; John A. Alcock, Baltimore, secretary and treasurer.

BUSINESS CHANGES.

The Lubec (Me.) Carriage Works, recently conducted by the late Geo. Fisher, has been reopened under the management of Frank Keegan.

Julius Glander, wagon maker at Beachwood, Wis., has sold out to Herman Heisler.

H. D. Wilson, formerly of Villisca, Iowa, who recently opened an implement and vehicle business at Clarinda, has removed to that city.

R. C. Dethman has purchased the vehicle and implement business of John Schladetzky, in Hale, Iowa.

A. C. Rinehart has purchased the interest of his partner, J. E. Fitch, in their buggy and implement business at Findlay, Ohio.

C. G. Rasmussen, of Little Sioux, Iowa, has purchased the implement and vehicle business of F. A. Reese, at Turin.

G. M. Dyer, of Terrill, Iowa, has sold his stock of implements and harness to John Tonsfeldt, a successful farmer living in that vicinity.

C. G. Monahan, formerly of West Union, Iowa, has removed to Elgin, where he recently purchased a stock of implements and vehicles.

D. H. Houser has purchased the interest of H. C. Hyatt in the implement firm of Hyatt & Riedman, Valley City, N. D. The new firm will be known as Houser & Riedman, and they will carry a line of automobiles in addition to the implement and vehicle lines.

The Kephart wagon factory at Clarksville, Iowa, has been sold to Strock Bros. & Co. The new firm consists of Mr. and Mrs. A. T. Strock, and their two sons, Ernest and Linfield. The business will be in charge of Ernest Strock as manager. The new company will not deal in farm implements, but will confine their business to the manufacture of wagons, buggies, sleighs, etc., and a general blacksmith business.

W. F. Uuren and E. C. Claus have formed a partnership at Udell, Iowa, and purchased the hardware business of J. A. Workman. They will add a line of implements and vehicles.

The plant of the Monroe Wagon Co., at Monroe, La., was bought over by Easterling & Gordon for Mrs. L. T. Scott, of Ruston.

John W. and Frank Kramer, employed at the carriage plant of Charles H. Sorg, have purchased the carriage and blacksmith shop of George M. Cox, at Mansfield, Ohio.

Shaw Brothers, of Quincy, Fla., have purchased from Mr. Joseph H. Day, formerly Day & Tannahill, his entire stock of buggies, wagons, harness, etc., at Augusta, Ga., and will close it out.

E. M. Miller, the founder of the E. M. Miller Carriage Company, at Quincy, Ill., disposed of his interests to E. K. Stone and son, A. J. Stone.

The Brown Truck Co. and the Gordon End Gate Co., Ralston, Neb., have merged.

Brumley & Kellogg have engaged in the vehicle and implement business in Trenton, Neb.

J. Spencer has purchased the vehicle and implement business of Grand & Dean, in Barneston, Neb.

Nelson Bros. have purchased the buggy and implement business of Holmberg & Johnson, in Carlstad, Minn.

George Davis has purchased the stock of vehicles, etc., of Wm. F. Winch, in Homer, Neb.

C. W. Woolsey has sold his vehicle and implement business in Hubbell, Neb., to T. J. McGovern.

H. A. Boyer has purchased the stock of buggies, etc., of Cavanaugh & Frink, in Faribault, Minn.

J. W. Corn has purchased the vehicle and implement stock of C. F. Harris, in Tarsney, Mo.

A. C. Frige has sold his implement and vehicle business in West Bend, Wis., to A. C. Lang.

W. J. Smith & Son have succeeded to the vehicle and implement business of Peterson & Smith, in Montevideo, Minn.

L. A. Franklin has sold out his vehicle business in Grand Rapids, Mich., to Kemmeler & Buskirk.

J. J. Van Bruggen has purchased the vehicle and implement stock of L. F. Dorr, in Uniontown, Wash.

H. J. Aldrich has purchased the wagon and implement business of W. H. Marvin, in Monticello, Minn.

The plant of the Monroe Wagon Company, of Shreveport, La., was bought over by Easterling & Gordon for Mrs. Lucy T. Scott, of Ruston.

Digitized by Google

Albert Donaldson has purchased the stock of buggies, etc., of J. T. Clapper, of Culbertson, Mont.

L. T. Sinter has purchased the implement and vehicle business of Davis & Co., in Lowry City, Mo.

Kirby Bros. have been succeeded in the carriage and implement business in Bucyrus, Kan., by Kirby & Hiflebower.

A. N. Graff has purchased the stock of vehicles, etc., of G. E. Johnson, in Brandon, S. D.

Ed. J. Martin has purchased the vehicle and implement business of O'Hearn Bros., in Flandreau, S. D.

The John Conklin & Sons Company, of Penn Yan, N. Y., has purchased the hardware and wagon business of C. M. Sharpe & Co., of Watkins. The store will be in charge of Mr. Clark.

FIRES.

The Shafer Wagon Works, of Mendon, Mich., were totally destroyed by fire; loss, $3,000

The planing mill and wagon factory of the Bryant Lumber Co., at Fourche, Ark., were destroyed by fire April 5. Loss, $15,000, with no insurance.

Slight damage by fire was sustained by the carriage factory of D. Delaney & Son, of Newark, N. J., on April 24.

Fire destroyed the carriage building of Henry Crowell, Newton, Mass., on April 19.

The vehicle and implement stock of Paul Renwin, in Prairie Home, Neb., has been destroyed by fire.

The vehicle and implement stock of Samuel Lee, in New Franklin, Mo., has been damaged by fire.

Fire destroyed the paint shop of the George J. Warden Co., carriage manufacturers, 8,000 Carnegie avenue, Cleveland, Ohio. Loss, $10,000.

The Ahlbrand carriage factory was destroyed by fire in Seymour, Ind., recently, and the loss entailed is about $75,000, partly insured; most of the stock and machinery burned. The fire came in the midst of the busy season, when orders were on hand to keep the plant running steadily for several months. About sixty-five men and boys are thrown out of work by the fire.

Several carriages and wagons were destoyed by a fire in the carriage factory of Welch, Dwyer & Grady, on Mystic avenue, Somerville, Mass. The loss was set at $7,000.

F. A. Whitney's carriage making plant, Leominster, Mass., was damaged $10,000 by fire April 18. Spontaneous ignition.

Fire destroyed John W. Thomas' cooper shops and spoke factory at Madison, Ind. The loss is estimated between $3,000 and $4,000 on factory and shop.

The plant of the Imperial Wheel Works, at Pine Bluff, Ark., had a narrow escape from being destroyed by fire, when the roof over the boiler room was completely destroyed. The damage will aggregate about $800.

Isaac W. Fenwick's carriage shop was destroyed by fire at Lenox, Mass.

Fire did $7,000 damage to the blacksmith shop and wagon factory of Charles Yentsch in Louisville, Ky., on April 19.

MISCELLANEOUS.

Arrangements have been made by C. A. Quigley, vice-president of the Studebaker Bros. Vehicle Co., Salt Lake City, to establish a branch house at Boise, Idaho, where a $100,000 stock will be carried. A two-story building 75 x 122 feet, will be erected, the cost of which will be $30,000.

W. R. Crawford will soon occupy a new building now being erected at Pine Bluff, Ark.

A. Morris is putting up a two-story building for his blacksmith shop and carriage works at Wichita, Kan.; cost, $2,000.

Geo. A. Brand will erect a carriage smith shop at East Windham, Me.

The John Deere Plow Co. has added automobiles to its branch in Sioux Falls, Iowa.

Anton Hess, saddlery and vehicle dealer at Cuero, Tex., filed papers in voluntary bankruptcy proceedings April 23. His liabilities are given as about $20,000 and assets about $17,000.

The Volunteer Carriage Company, at Nashville, Tenn., has declared a quarterly dividend of two and one-half per cent.

Craig & Craig, Keosauqua, Iowa, are building a two-story implement and vehicle warehouse opposite their hardware store.

The Eureka Implement & Furniture Company, Eureka, S. D., recently completed an addition to their store building, 24 x 50 feet, two stories. The upper floor of the new part will be used as a sample room for buggies and wagons, and the ground floor for flour, feed and farm implements. With this addition they have floor space of over 6,000 square feet.

J. O. Kasa, of Wallingford, Iowa, is building an addition 40 x 70 to his hardware store, and will use same for his implement, vehicle and harness department.

Wm. J. Voss & Co. will erect an addition to their implement and vehicle warehouse in Columbus, Neb.

Banks Griffith is erecting a store building in Newton, Kan., and will carry implements and vehicles.

Imlay & Henry, vehicle and implement dealers of Willow Lake, S. D., are building an addition to their warehouse.

Walberts & Timberlake are building an addition to their implement store in Mineral, Kan., to show vehicles in.

John Alam is erecting an addition to his vehicle and implement warehouse in Burlington, Iowa.

James Hall, implement dealer at What Cheer, Iowa, has leased additional store room to be used for his vehicle business.

The Davenport (Iowa) Wagon Company has commenced the erection of a five-story warehouse.

The Nevada Motor Co. will erect a factory in Council Bluffs, Iowa.

TRAIN LOAD OF STUDEBAKER SPRINKLERS FOR CHICAGO.

What was probably the largest single shipment of sprinkling wagons ever made by any manufacturer was shipped by the Studebaker Bros. Mfg. Co., of South Bend, Ind., on Monday, March 22, from South Bend, in one immense train load to the city of Chicago.

There were fifty sprinklers in all, loaded on seventeen cars, and when the "Studebaker water wagons" arrived in Chicago on Tuesday morning they were unloaded and paraded through the streets of Chicago. The interest that this unusual sight on the streets of Chicago evoked is best told by the Chicago Evening Post of March 24, in an item which is reprinted here.

Fifty water wagons were paraded through the downtown district in the rain this morning amid jests and cheers from spectators. The vehicles are the new sprinklers purchased by the city from the Studebaker Company, of South Bend, Ind.

Deputy Commissioner of Public Works Paul Redieske and Superintendent of Street and Alley Cleaning Frank Solon led the procession in an automobile, followed by two floats decorated by the wagon company.

The parade started at Taylor and Clark streets, proceeding east to State street, north to Adams street, west to Franklin to Randolph street. There the fifty wagons drew up in front of the City Hall, and remained for nearly half an hour for inspection by city officials.

They then proceeded to State street, south to Adams street and to the lake front, where the group was photographed. Thence they were distributed to the various wards to which they had been assigned.

The procession of cream-colored carts attracted attention in the streets, and men and boys on the sidewalk took every occasion to display their wit at the expense of the drivers who had been drafted from the various wards.

All known forms of "water wagon" jokes were sprung, and Deputy Commissioner Redieske was responsible for a rumor that one original gibe had been created, but he could not remember what it was.

Great Britain and Ireland are credited with 154,394 automobiles. France with 43,350.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

Electric and Gasoline Trucks.

The use of electrically propelled trucks has been restricted for a long time for a number of reasons which had no right to exist. The long use of these trucks are favorable in this that they last longer, need, so it is understood, or at least claimed by their builders, fewer repairs, and in the long run represent a less output for maintenance as compared to the amount of work done when compared with the gasoline truck. It seems from all accounts that the chief objections to the electric truck is connected with the maintenance of a speed beyond what they can economically bear, and that they give best results when run more slowly than a gasoline truck, although this point is not definitely established. It is recommended that a remedy against premature wearing out can be had by the use of a maximum speed governor on the motor and the use of an engine of less power and which should be provided by four speed transmissions.

Improved Methods of Suspension.

The wide adoption of pressed steel frames in motor car construction has opened the way for the inauguration of more specific methods of suspension. The suspension of the frame on three pivots, which has to be done without straining the housings, is a mechanical feature said to obviate some of the annoying difficulties of suspension heretofore encountered. In this way the crank case and chain gear case are less subject to vibratory action. This modification is effected by the use of universal joints.

Automatic Oilers.

The use of automatic oilers finds welcome over the old method of filling the crank chamber half full and replenishing. Lubrication is undergoing a thorough investigation at the hands of experts, but the experiments with new devices, no matter how theoretically right, are not far enough advanced to promise any revolutionary improvement over the best existing methods. By many builders the present system is regarded as the best that can be expected, but they are willing to accept any modification that will do better.

Commercial Trucks and Salesmanship.

Some builders of commercial trucks, in trying to account for what they regard as the disappointing increase in the sale and use of those vehicles, claim that one apparent cause is the lack of salesmen who are "up" in all the necessary details of construction, equipment and operation of trucks. This may be true. On behalf of the salesman it can be said that commercial trucks cannot be sold like other merchandise. The possible customers are relatively few. The supplanting of horse power cannot be brought about by a call or two. Results as measured by salaries cannot be had in a week or a month. Builders are not willing to pay salaries for hammering at possible customers. Soliciting in the commercial truck field is not encouraging. The bulk of business so far done has been with buyers who voluntarily come forward.

Can Buy Current Easily.

The falling into line of many electric light companies to sell current on demand, will contribute somewhat to the extension of the use of electric vehicles. The companies have heretofore regarded the peddling of current as too unimportant a matter for their consideration. But they are beginning to feel in an accommodating mood, and peripatetic automobilists will soon be able to buy current as they can buy gasoline. The difficulty and often the impossibility of buying current has stood in the way of the electric vehicle, and has restricted its sale to the cities where power was available. Another obstacle was the lack of electric garage facilities. This is being overcome in sections of New England, and will ere long be overcome elsewhere.

STANDARDIZATION VITALLY NECESSARY.

Standardization of automobile parts has become a most vital question, and one that now is worthy of the most conscientious attention. This is a matter that affects the owner and driver more than the factory man, because it will cost the latter much money to make changes of this sort. On the part of the buyer, however, there should be no hesitancy in demanding such reforms as standard control systems. There should not even be any necessity to call attention to this, as it is self-evident to anyone who has ever driven two different makes of cars.

In one, the forward movement of the lever on the outside gives the low speed. Get into another car, get into crowded or congested streets, and then upon involuntarily throwing the outside forward speed, instead of going slowly forward the car goes backward into another rig, and the driver, probably a very careful operator, has a bill of damages to pay. And all through no fault of his own nor through any lack of care or ability.

Then there is the matter of the spark and throttle. On one car the former is uppermost, on the next the throttle is above. In the habit of driving the former, you retard the upper lever, and when you crank the motor it throws you over into the next county. Result, doctor's bills and other expenses through no fault of your own.

Moreover, the number, location and operation of the foot pedals are worthy of standardization. When used to operating the clutch with the left foot, it is more than disappointing to apparently declutch and try to change gears, only to find that the left pedal operates the brakes. So instead of declutching you have put on the brakes and spoiled your gears.

That the importance of this subject is partly appreciated by

Digitized by Google

the buying public is apparent from the statement that one of the foremost American car builders, turning out one of, if not the finest car in the country, was obliged at the beginning of the present season, by outside pressure, to change the form and location of the gear shifting lever. The former position was a good one and the shifting arrangement was excellent, but the public would not have it. As a result, the distinctive position was abandoned in favor of the commonly accepted one.

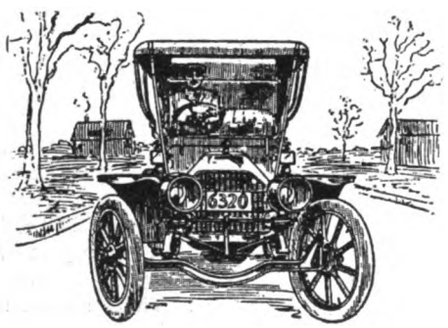
So, too, with the progressive gearset, this was markedly simple, comparatively lower priced to construct and install. But most of the people wanted and would have the other form and it became in a sense the standard. This necessitated that many firms change their construction, which has been done to a great extent, until to-day there is but one very prominent firm using this form of gear box, and, if rumor can be believed, even that will be changed for next season.

Instances might be cited, ad infinitum, but that is unnecessary. The idea is that many of the present forms which automobile parts take should be so altered, not to be interchangeable, that would be asking too much, but to be standard so that the operation of all cars will be alike. Then, and then only, will the danger and worry, with consequent expense, be eliminated.

This millennium can only be brought about by a strong and urgent demand from the people. To make such a demand efficacious, it must be widespread or universal. Previous to that must come a full realization of its advantages and the disadvantages now existing.—The Automobile.

LAMPS TURN WITH CAR.

A device which makes possible the turning of automobile lamps with the steering apparatus, so that the track taken by an automobile in running around curves will be as well illuminated as a straight stretch of road, has been patented by an Ohio inventor. With automobile lamps stationarily attached to



the frame of the machine, as is now customary, the illuminated stretch, when going around a curve or a circular track is away off in the fields or on the side of some one's house instead of on the path the machine is taking.

The apparatus is attached to the steering wheel, so that the turning of this wheel not only swings the forward wheels but the lamps as well.

REQUIRED AIR PRESSURE IN TIRES.

On account of the great damage done to tires by running them improperly inflated, a regular fixed schedule of air pressures has been computed, based upon the size of tire and weight of load. This has been improved upon by branding the air pressure on some makes of tires where the chauffeur can see it staring him in the face every time he applies the pump.

The recommended air pressures which are thus moulded into the tires are as follows: For 3½ inch tires, 60 pounds; for 4 inch tires, 75 pounds; for 4½ inch tires, 85 pounds; for 5 inch tires, 90 pounds, and for 5½ inch tires, 95 pounds.

It is an actual fact that not enough inflation is the direct cause of two-thirds of tire troubles to-day.

COMPLETES RECORD NON-STOP RUN.

Maxwell Machine Travels 10,074 Miles Without Any Stop of the Engine.

The world's non-stop automobile record has experienced a most substantial boost by the performance of the Maxwell touring car, which completed the scheduled 10,000 miles at 4:21 P. M. on April 12 at Boston.

The run was begun on March 18 under the auspices of the Bay State Automobile Association, whose official observers accompanied the car at all times.

The Maxwell car, when it was stopped by President Spears, of the A. A. A., had covered 10,074 4-10 miles, the ten-thousandth mile being completed with Mr. Charles J. Glidden, the father of the Glidden tour, in the car as one of the official observers of the club. During the entire run, which extended between Boston and Worcester, Providence, Newburyport, Nashua, Falmouth and South Framingham, the motor was never stopped. Only four quarts of water had to be added to the radiator, the first addition being necessary only after the car had travelled over 5,000 miles. The drivers, C. E. Goldthwait, Arthur See and Ellery Wright, worked in eight-hour shifts, as also did the observers of the Bay State Automobile Association.

The gasoline consumption for the 10,074 miles was 679 gallons, giving approximate mileage of 14.8 per gallon of fuel.

After the conclusion of the run the Maxwell car was given into the custody of the Massachusetts Technological Institute, whose head, Prof. Park, has charge of a committee of four technical men who dissembled the car and will render an exhaustive report on the wear which has become evident in the various parts of the car's mechanism. That the car has suffered no considerable deterioration was shown in the final test to which the car was submitted under the direction of the committee.

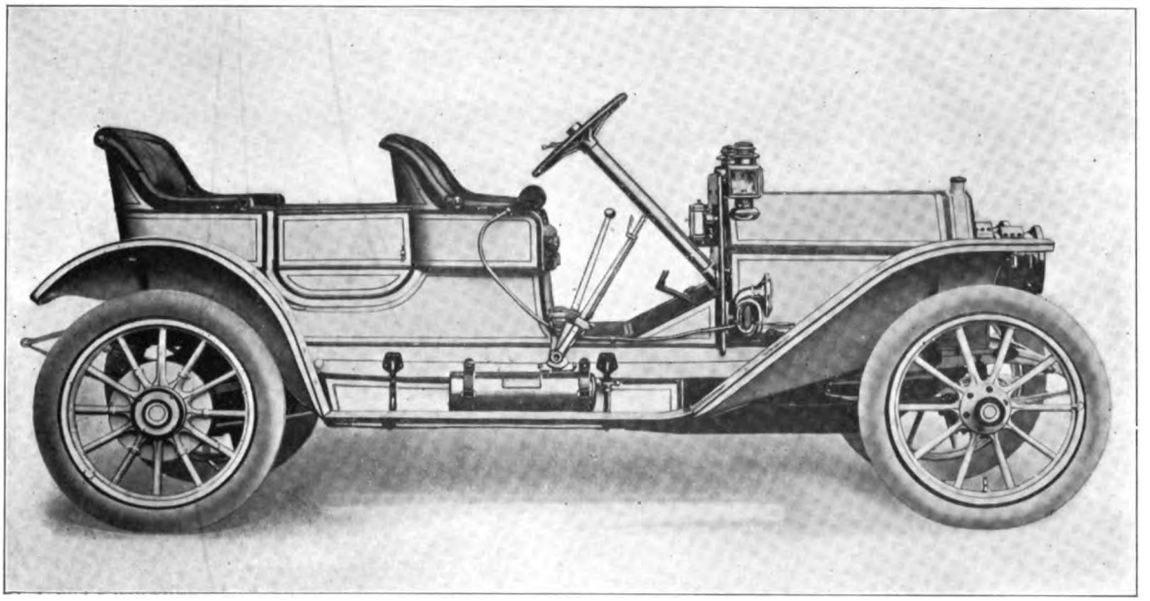
The car was made to ascend Boston's steepest incline, Corey Hill, which is a 22 per cent. grade. The car was stopped midway on the hill, started again, and climbed to the top after changing from the low to the intermediate speed. After that the record holder was sent back down the hill and stopped again, showing the perfect working condition of its brakes; and as a final test of reliability the car was backed up the entire hill, with five passengers, which demonstrated that motor and transmission were in perfect working order after the most gruelling non-stop test to which any car has ever been subjected.

A COMBINED ROOF LOCKER AND HANGING MIRROR.

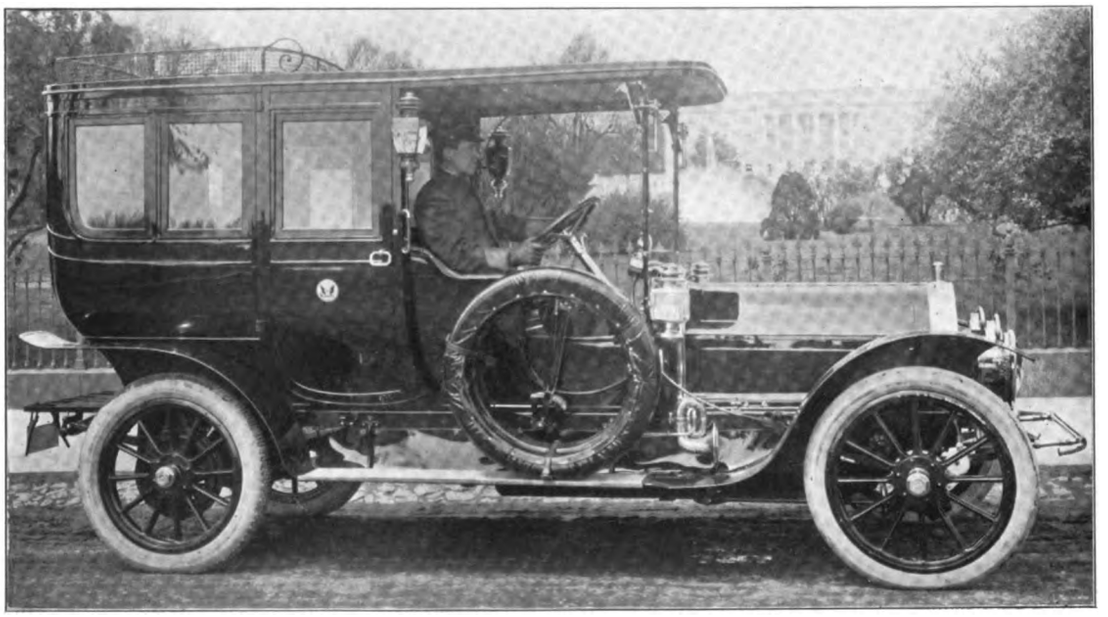
Locker space has been devised under the driving seat, in the central division of the driving seat, under and on the long side steps, under the hind seat, and various positions on the roof and at the rear of the chassis. Among the novelties in this direction is not the position of the locker, but its means of access. A portion of the roof, about 9 in. from the rear, is built up in the form of a trunk. It is divided into three portions, and the central one is provided with a small door opening downwards into the body, for which purpose the roof is cut away. Through this small open door access is gained by small sliding plates to the divisions formed in the front and back of this roof locker, and a small electric bulb illuminates the central division of access, so that the interior of the other portions is properly lit up. This lid, when swung down, reveals on its upper side a pair of hinged mirrors, which open out sideways, disclosing a set of neat brushes and other toilet requisites snugly held in their respective pockets. The lid can be arranged at an angle so that the motorist seated on the hind seat can with comfort regard himself in the mirrors ovehead, and perform his or her toilet while rushing along the road.—Automobile and Carriage Builders' Journal (London).

Digitized by Google

Illustrated Automobile Section, May, 1909

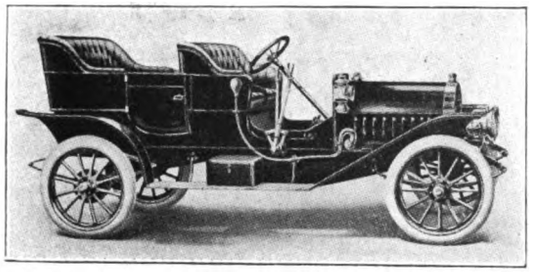


MARMON "THIRTY-TWO" SUBURBAN CAR.
Built by Nordyke & Marmon Co., Indianapolis, Ind.



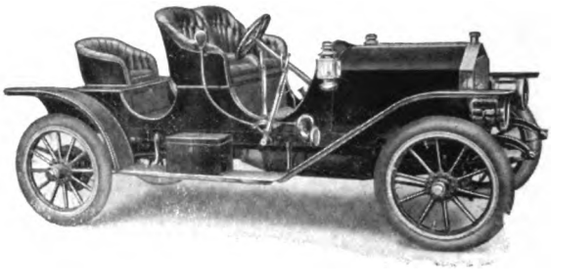
PRESIDENT TAFT'S 48 H. P. SUBURBAN CAR.
Built by Pierce-Arrow Motor Car Co., Buffalo, N. Y.

Digitized by Google



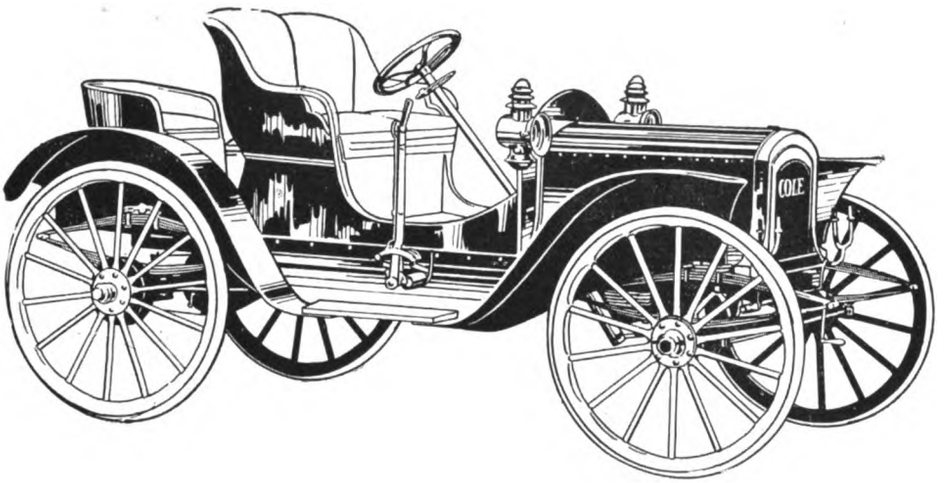
PATERSON 1910 CAR.

W. A. Paterson Co., Flint, Mich.



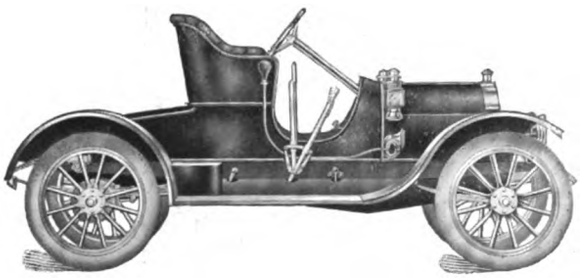
THREE PASSENGER RUNABOUT.

Model Automobile Co., Peru, Ind.



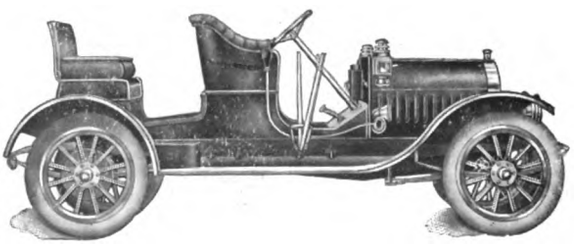
SOLID TIRE RUNABOUT.

Built by Cole Carriage Company, Indianapolis, Ind.



TWO PASSENGER RUNABOUT.

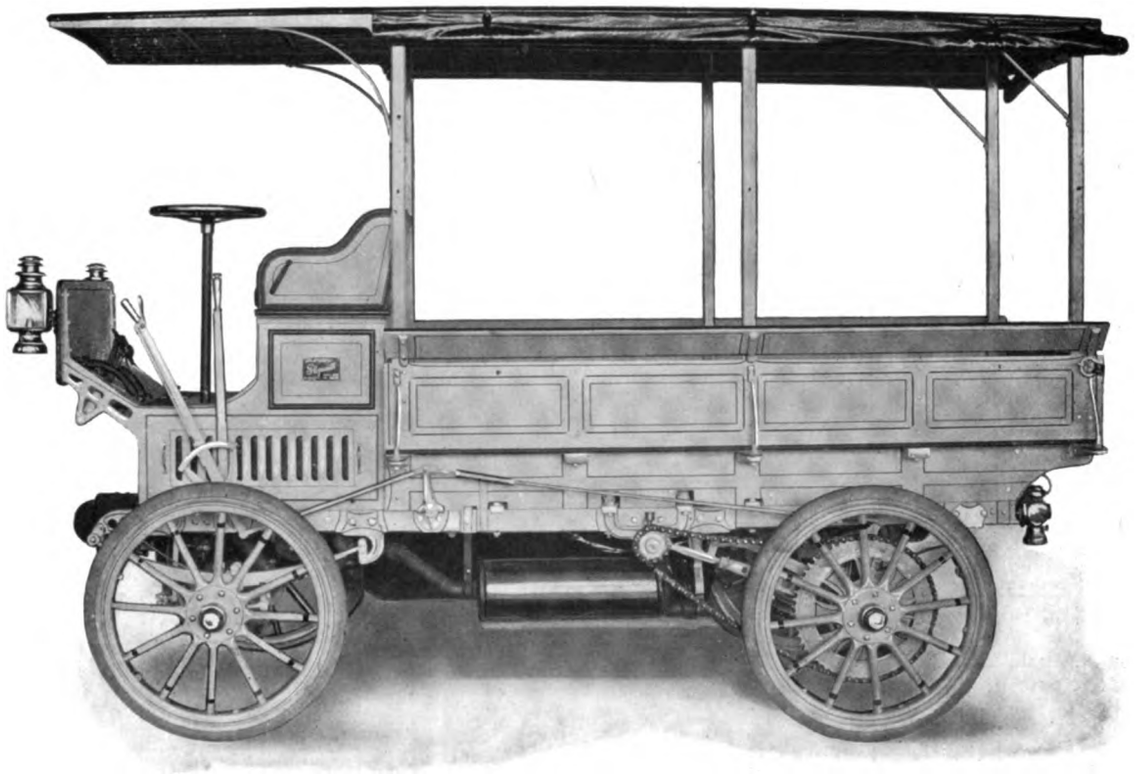
Atlas Motor Car Co., Springfield, Mass.



TWO OR FOUR PASSENGER RUNABOUT.

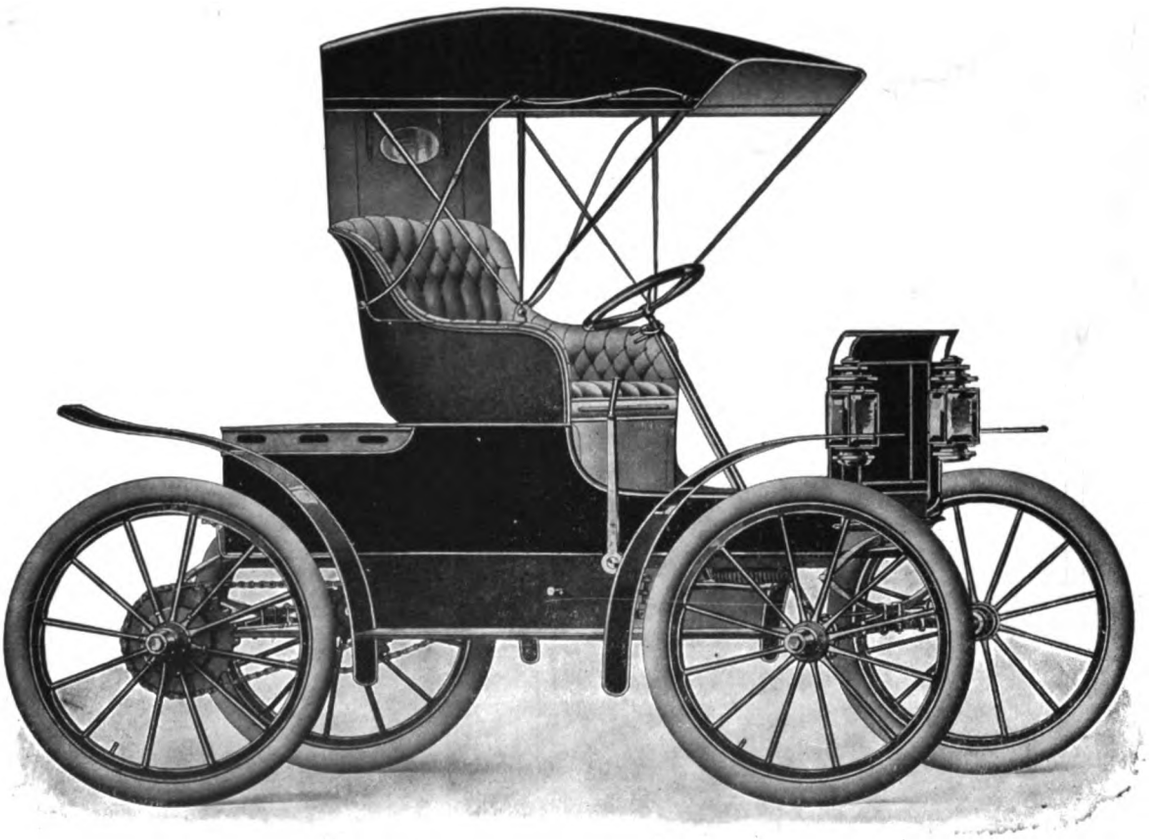
Atlas Motor Car Co., Springfield, Mass.

Digitized by Google



MEDIUM SIZE CAR FOR QUICK SERVICE.

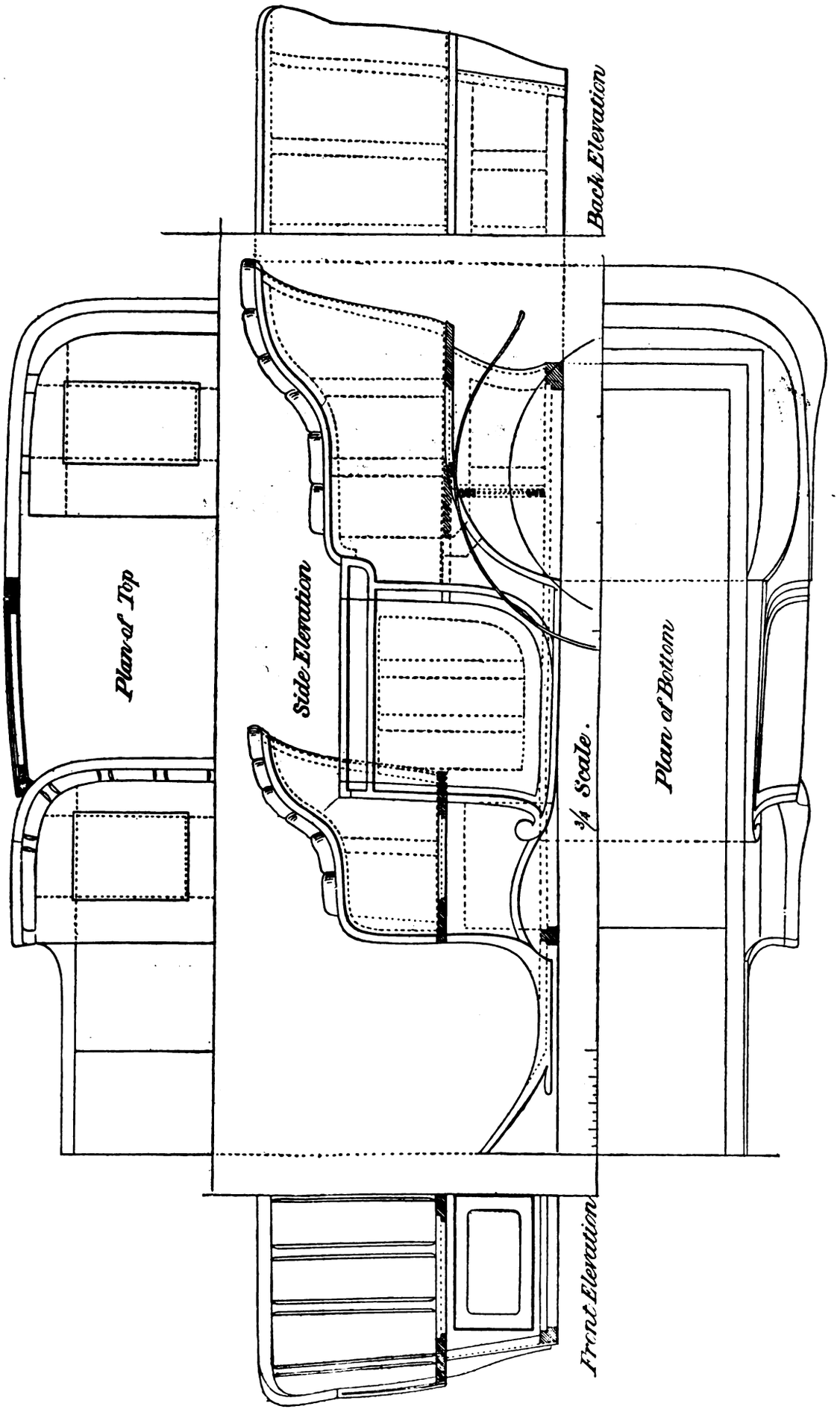
Built by Plymouth Motor Truck Co., Plymouth, Ohio.



TWELVE HORSE POWER MOTOR BUGGY.

Built by Anderson Carriage Mfg. Co., Anderson, Ind.

Digitized by Google



WORKING DRAWING OF MOTOR PHAETON.

Described on opposite page.

Digitized by Google

Body Construction and Finish

WORKING DRAWING OF MOTOR PHAETON.

From Motor Car Manufacturers' Art Journal.

Drawing on opposite page.

The drawing shown this month is of a Roi des Belges phaeton, the curve not being so pronounced as usual, which gives it a handsome appearance. The hinge pillar is quite original in design, the moulding having a graceful curve into the seat line, a special feature in this body.

The bottom moulding runs in a graceful curve to the toe of the shut pillar, the curve being continued to the bracket. The side sweep in this drawing has a regular curve and not a return sweep which we do not advocate, as room in the bodies is essential, and when it is narrowed to the back of the hind seat the door has not such a graceful appearance and the sitting accommodation is curtailed.

As usual, the whole of the framing should be of English ash, the bottom sides being 2 in. by 2 in.; the rocker we should recommend to be cut from 4 in. ash.

It will be noticed that the shape of this bracket is very similar to the bracket used in the old two-seated driving or park phaeton, and we are of the opinion that no better method of construction could be used.

The bracket having been cut to shape from 4 in. ash is faced up and the bottom side screwed to it, that is to say, the screws fasten through the bottom side into the rocker, the rocker should be continued to the back of the seat this will then form the seat framing, the cross bars of the seat being tenoned into it.

Now the pillar which is half-lapped into the rocker should be shaped at the top as the drawing, a body plate 1½ in. by ½ in. half-round is fixed across the body, and runs to the top of the hinge pillars, which strengthens it and holds the joints firm and rigid.

Eleven battens are placed round the seat, but if a good strong aluminum or steel panel is to be used no center cross rails will be necessary, as curving the aluminum makes the panel strong enough to withstand all ordinary wear, and therefore it is only labor thrown away to place in these center cross rails.

Several makers fix a small edge plate ¾ in. by ¼ in. to the center of the top back rail; this materially strengthens the top rail, as half-lapping the standards into it weakens it considerably and when the body is very wide it is necessary to have some strengthening plate; it is also usual to run a light edge plate on the elbows, terminating with two or three screws into the hinge pillar.

The front seat framing should be made of ash, and the side pillars half-lapped and screwed to the seat. Nine battens are used in this seat.

The top rail should be cut from 2 in. ash and jointed in the corners; half-lapping is used as much as possible in framing up, as it is quicker and more substantial than tenoning.

The well and boot of this body are all framed of 2½ in by ⅞ in. ash, panelled with mahogany; the front bracket should be screwed from the inside of the boot framing and brought in a graceful sweep to the seat pillar.

The heelboards should be made of ¾ in. mahogany panelled with ¼ in. mahogany, and there are at the present time some improved spring catches which hold the heelboard quite firm and obviate the necessity of putting on a cheap outside catch, of which we hear so many complaints.

Several prominent makers are using stronger material for floor boards; at one time nothing but white or yellow pine was used, but it has been found that when the floor boards have to be removed a stronger material must be used, and American ash and birch are taking its place.

The doors of this car should be hinged with a 2½ in. hinge and a strong outrigger, a lever lock of the approved type also should be used. Attention has been called to the locks used on these doors, and it is a source of complaint with all users of the car that after they have been a short journey the door rattles considerably; this in most cases has been caused by the builder fitting inferior and cheaper locks.

Some makers have had locks specially designed, the bolts being made ¼ in. deeper and 3-16 more travel, and in the interior a brass wearing piece is placed; in consequence the striking plate is made wider and thicker, therefore there is more wearing surface to the bolt and plate.

Side elevation.—Length of body set off on chassis, 7 ft. 7 in. Distance between dash and driver's seat, 2 ft. Width of door, 1 ft. 9 in. Length of hind body from hinge pillar on seat line, 2 ft. 5 in. Length of hind seat, 2 ft. Sail of hind body, 7 in. Depth of rockers, 1 ft. 1 in. Depth of hind body in center, 1 ft. 3 in. Depth of hind body at back, 1 ft. 11 in. Depth of door, 1 ft. 9½ in. Depth of front body in center, 1 ft. 1 in Depth of front body at back, 1 ft. 9 in. Distance from dash to front hind wheel, 5 ft. 1 in.

Front Elevation.—Width across body at top over all, 4 ft. Width across body at elbow line, 3 ft. 10 in. Width across body on seat line, 3 ft. 8 in. Width across rocker at top, 3 ft. 2 in. Width across rocker at bottom, 2 ft. 10 in.

Back Elevation.—Width across back at top over all, 4 ft. 4 in. Width across back at elbow line, 4 ft. 1 in. Width across back at bottom, 3 ft. 10 in. Width across rocker at top, 3 ft. 2 in. Width across rocker at bottom, 2 ft. 10 in.

PERMANENCY OF PAINT STRUCTURE UPON ALUMINUM SURFACES.

While the painting and finishing applied to aluminum automobile bodies requires less filling up, and somewhat restricted surfacing operations as compared to the ordinary wood surface, there is nevertheless need—actual necessity, in fact—of plenty of substantial coats of material in order to build up and produce the proper finish upon the increasingly popular metal bodies. Authorities have contended that aluminum surfaces may not only be painted and finished quicker than wood surfaces, but the paint and varnish structure, by reason of its thinner body, will hold firmer, and without cracking, to a longer period. Data is wanting on this point to prove the value of this contention, but there is conclusive evidence in the hands of men engaged in repainting automobiles to prove that much of this reasoning is fallacious. Generally speaking, it may be said that the strain and hard usage to be remarked of the service to which all automobiles are subjected is quite as severe upon the aluminum as upon the wood surface. It follows, naturally, that the thin and fragile film of paint and varnish must yield often where the deeper depth of material will hold strong and intact.

It is not argued that the aluminum surface requires the same depth of filling up materials that the wood surface requires, but the point to be urged is that both most excellent workmanship and a good substantial pigment foundation are needed in the painting and finishing of aluminum or metal bodies. The tendency, as statistics gathered in New York carriage and automobile paint shops show, has been to use too few coats of material in painting these metal surfaces, with the result that the finish has suffered in appearance thereby. Abbreviation of

Digitized by Google

coats is permissable up to a certain point; beyond that appearances become cheap and tawdry. And in any event where a scarcity of surfacing material is used, uncommon care and skill in surfacing and applying the material is due.

Before coating the aluminum or metal surface it should, as the best city practice dictates, be roughened with emery cloth or coarse glass paper. Then prime with either new or old surfacing process mixtures. Cuff this coat lightly with No. ½ sandpaper when quite dry, and with a mixture made elastic with raw linseed oil to glue it solidly to the surface, coat smoothly. This coat having dried, apply every 24 hours four successive coats of roughstuff, avoiding brush marks. Rub the surface of stuff in the customary way, sandpaper lightly, and apply two coats of color, then a coat of glaze, or color varnish, a couple of coats of rubbing varnish, and a coat of finishing varnish, using between and upon these coats the requisite and accustomed surfacing processes. This is somewhat abbreviated as compared with the ordinary processes applied to wood surfaces, but it provides for considerably more material upon the surface than not a few modern metal methods of finishing have prescribed. And in consideration of required durability and appearance it offers no excess of material or surfacing processes.

HIGH CLASS COLORS ESSENTIAL IN AUTOMOBILE PAINTING.

It would seem hardly necessary to sum up the reasons why high-class colors are essential in the painting of automobiles, but some of these reasons are not sufficiently transparent to be understood, at first glance, by a good many painters. The horseless vehicle is exposed to a harsher and more exhaustive form of service than is the horse-drawn carriage. Small consideration is given it, as a rule, when touring rural sections. The straining and tugging, vibration and oscillation, and the general wear and tear constitute a hard and gruelling service exposure which only the colors of royal pedigree, fortified by ingredients of uncommon endurance and capacity for resisting the attacks of enemies without number, are able to durably withstand. Some authority has said recently that the service to which the automobile is exposed is anywhere from 75 to 85 per cent. harder than that visited upon the horse-drawn carriage. While this estimate may be considerably removed from the exact, it is sufficiently within the bounds of accuracy to furnish a fair basis for urging the importance of using colors of established worth and reliability. Colors finely ground, of unsurpassed strength, of exceeding lustre, purity of tone and elasticity, cost more, to be sure, than pigments of equally high sounding titles, but their present and ultimate value are beyond any measure of comparison with the pigments sold under cheaper quotations. Apart from any other advantage it may be mentioned that the color of higher quality, and therefore more finely ground, has better covering properties, and will by virtue of this possession go further than the coarser and cheaper pigment. Moreover, because of its finer atoms the color will furnish smoother surface results at a less outlay of labor.

Colors, by reason of the larger field over which they are displayed, are more conspicuous upon the automobile than upon most other vehicles, which renders inferiority easier of detection and a more flagrant offense.

Perhaps the most notable failing, however, of the inferior pigment is in its lack of durability under the exposure to which it is destined upon the horseless carriage. Little weaknesses in covering power, brilliancy, purity of tone, etc., may possibly be overlooked occasionally, but absence of durability—never. The conclusion may be safely drawn, in view of all these facts, that the rare and superior colors, even at double the purchase price of the weak and shoddy pigments, are the more economical.

Subscribe for The Hub, the leading carriage journal.

MICHIGAN THE AUTOMOBILE STATE.

In 1908 Twenty-two New Corporations Were Organized in Michigan.

Michigan is no longer the Wolverine State. It is the automobile State.

The report of the Secretary of State at Lansing shows an enormous growth in the automobile and allied industries for 1908.

During the year twenty-two new corporations were organized for the manufacture of automobiles or motors, the conducting of garages or the development of the gas engine. These twenty-two corporations have a combined capital of $2,400,000.

In addition to this number of new corporations, eleven more already engaged in the industry increased their capital stock from $2,340,000 to $6,500,000. New corporations and the additions to capital in Michigan during the last eleven months reach approximately $7,000,000.

These figures do not include the large and well established organizations of the Cadillac, Oldsmoboile, Reo, Chalmers, Buick, Reliance, Brush and other important companies. It is estimated that the dividends made by Michigan firms in 1908 will reach $50,000,000.

DEVICE TO CHECK "JOY RIDING."

The doom of "joy riding" has been sealed, if a little device invented by E. S. Phelps, of No. 74 Cortlandt street, New York, is approved and adopted by automobile owners. The mechanism will automatically register every time the car is set in motion, recording the day and the time consumed in every ride.

It is exceedingly simple, consisting of an eight day marine clock adjusted to heat, cold and position, a registering pencil and dial and a vibratory pendulum so connected that the vibration of the running car is magnified to such an extent that a distinctive mark will be made on the dial.

The machine is attached to the dashboard of an automobile and is set in motion by starting the clock. The pencil and register dial are so arranged that a continuous spiral curve is registered while the vehicle is at rest. As soon as the car is started the natural vibration of the machine causes the line of the spiral to be made of a much heavier shade than when at rest, thus recording the actual running time of the car.

The dials are so arranged that the running and rest periods of a car can be determined for one week by a simple examination of the dial. The device is under lock and key and every time the door of the case is unlocked the machine registers the opening, so that a chauffeur endeavoring to tamper with the mechanism would have that fact registered against him.

TO AWARD MEDALS OF HONOR.

Medals of honor, to be designated as the "A. C. A. Gold Medal," "A. C. A. Silver Medal" and "A. C. A. Bronze Medal," respectively, are to be awarded by the Automobile Club of America for varying degrees of excellence in different fields. It is the plan of the club to institute trials with complete automobiles and similar trials or tests with magnetos, tires, lamps, taximeters, etc., as a result of which these medals will be awarded.

MOISTURE A DESTROYER OF TIRES.

When tires are allowed to stand in water or even damp places for any length of time, their life is considerably shortened. The constant exposure to moisture causes the outer tread to separate from the fabric much sooner than it would under natural conditions. Failure to appreciate this fact often causes both tire and maker to be unjustly condemned for the ignorance or carelessness of the user.

Digitized by Google

Tires and Accessories

New Tire Factory.—The McGraw-Burgess Vertical Fabric Tire Co. has been incorporated at Pittsburg, Pa., with $100,000 capital. The offices are at Grant boulevard and Thirty-third street. A plant is being built by the company at East Palestine, Ohio, near Pittsburg. The principal building is to be 250 x 50 feet, two stories, of brick and cement. The company expects to be in full operation by the middle of June. The officers are: President, E. C. McGraw, proprietor of the American House, at Pittsburg; vice-president, R. W. McGraw; treasurer, H. G.Morgan; secretary, Hartley Howell. Sales manager will be Wm. L. Burgess.

Moving to Niagara Falls.—The Leather Tire Goods Co. is removing its factory from Newton Upper Falls, Mass., to Niagara Falls, N. Y., where the entire business, manufacturig and sales, will be concentrated.

Built an Addition.—Empire Automobile Co. (Trenton, N. J.) has built an addition to its factory lately which will enable it to very greatly increase its capacity, which has, until this time, been crowded to the extreme limit.

Little Concerned About Tariff.—Tire manufacturers say that the former rate of 30 per cent. was sufficiently high to prevent competition, and that the new rate will make no change in the situation. According to a provision by the senate finance committee the rate on tires is made equal to the 45 per cent. rate on automobiles and other auto accessories.

Changes at Hartford Rubber Works.—James P. Krogh, who has been with the Hartford Co. for thirteen years, succeeds Henry Plow as treasurer, the latter gentleman having resigned to become connected with the Mitchell Motor Car Co., at Racine, Wis. D. W. Pinney has been promoted to the position of assistant treasurer, and Franklin Kesser, lately sales manager, has been made assistant secretary.

Promoted to Factory Manager.—A. A. Templeton has been promoted to the position as factory manager at the Morgan & Wright plant in Detroit, succeeding Geo. A. Burnham, who died last November. Wm. McMahon has been appointed to succeed Mr. Templeton as superintendent.

New Incorporations.—Barrell Pneumatic Tire Protector Co., April 14, 1909, under the laws of Massachusetss; capital, $50,000. Incorporators: Arthur E. Carson, Bedford, Mass.; Robert H. Kammler, Boston, and Horace A. Crossman, Cambridge, Mass.

Victor Tire Traction Co., April 14, 1909, under the laws of Massachusetts; capital, $50,000. Incorporators the same as for the Barrell Pneumatic Tire Protector Co.

Dreadnaught Tire Co., March 23, 1909, under the laws of New Jersey; capital, $2,000. Incorporators: Stewart Browne and George W. Harris, No. 170 Broadway, New York, and William Lee Hoskins, Glenbrook, Connecticut.

Will Reorganize and Make Tires.—The Rubber Steps Manufacturig Co., of Exeter, N. H., has added an outfit for making automobile tires and repairs, together with plant for making its own rubber stock. It is the intention later to reorganize the company with a change of name and increased capital. The company will continue to make rubber steps.

Factory Forces Largest Ever.—Over 2,000 additional employes have been added to the four principal rubber companies at Akron, Ohio, since the first of the year, due in a measure to the completion of factory additions, making the factory forces the largest they have ever been.

New Office Building and Laboratory.—Excavations were begun the latter part of April for a new office building and laboratory for the Diamond Rubber Co., at Akron, Ohio, which will be 145 x 50 feet and three stories high. The part of the building to be devoted to office purposes will serve merely as an addition to the present office. The company are also planning a new firestone building about 200 x 100 feet. This will be uniform in style with the insulated wire building recently completed.

Doubled Its Capital.—The capital stock of the Goodyear Tire & Rubber Co., Akron, Ohio, was increased from $1,000,000 to $2,000,000 at a special meeting held April 12. The preferred and common stock are each increased from $500,000 to $1,000,000. Charles W. Seiberling, vice-president, said that part of the new stock will be placed on the market. The expansion of the trade and manufacturing facilities of the company has made the new issue of stock advisable. Resolutions on the death of Byron W. Robinson, late director of the company, were adopted at the same meeting.

AGREE NOT TO RACE.

Thirteen of the largest automobile works of Germany and France have come to an agreement not to participate in any big race or competitive contest during 1909. The penalty for violating the agreement is fixed at $20,000. This move is apt to put a damper on the speculation in constructing auto roads for racing purposes. The competitive races have caused heavy expenses to the automobile manufacturing works.

THE B. F. GOODRICH CO., OF NEW YORK.

The New Premises, Nos. 1776-1778 Broadway, at Fifty-seventh street. The Broadway front appears at left of picture.

—Courtesy India Rubber World.

Digitized by Google

AUTO FACTS AND FANCIES.

A French commission has been appointed to investigate into the practicability of adopting automobile and internal combustion motors in agriculture for purposes of economy and increased production. Tests are to be made in four localities and to continue until definite results can be arrived at. Tests of commercial vehicles, under the same authority, will be had from October 15 to November 15. The purpose is to place actual facts and advantages before the public with a view of urging the adoption of methods which may increase agricultural wealth.

The cost of motor truck science continues to be the subject of much investigation and discussion. All that has been recently developed only goes to confirm the earlier estimates of advantages with a certain few exceptions, due to carelessness of ignorance. Some very surprising figures have been recently formulated with reference to five-ton trucks especially, wherein the conclusions drawn, if correct, show that truck evil is about one-third of horse service.

Numerous experiments have been made by users of trucks to ascertain how long a truck under fair but severe usage can remain in active commission. One instance, which it is claimed was not exceptional, gave 522 days in which 16,489 miles were covered, hauling 4,000 tons in 1,372 trips. The figures as to oil consumption were decidedly in favor of oil as against oats and hay.

Some one figures out that one automobile is in use for every 400 of population in the United States.

A company is being organized in Boston to erect and conduct garages throughout New England to accommodate electric automobiles with charging facilities.

The discussion of the economic possibilities of agricultural traction by self-propelled agencies is serving to bring out a mass of interesting facts and details which are known only in a vague way. Out of a mass of figures it is deducable that traction by power runs so far under cost of horsepower as to leave very little if any room for choice, and yet the alternative is not accepted promptly. Farmers are accustomed to horse power. They raise their own horses and their own feed, and have their stabling. The strictly commercial and economic features have not yet made a very deep impression. Besides agricultural traction is in its infancy.

Of the over six hundred concerns which at one time or another have entered the business of building automobiles, over half have gone under for various causes.

STEEL BLUE OVER NICKEL.

By the use of the well-known hyposulphite of soda and acetate of lead dip it is possible to obtain a blue color on all metals by simple immersion. This dip is used for producing a blue color on metals to imitate a blued steel. If well done, the effect is excellent, and almost exactly resembles steel blued by heat.

Although the blue color can be used on all metals, it is particularly good on work that has been nickeled. The white lustre of the nickel gives an excellent base for the blue film, and when it is thus used the color is very vivid. If the blue color is to be put upon nickel which is not to be buffed, it is preferable to carry on the operation immediately after the nickel has been deposited, in order to avoid staining or tarnishing. If put on the buffed nickel, as it usually is, great care must be used in cleaning, as the blue dip will not "take" over grease. For this reason it is preferable to buff the nickel with rouge, as it is more readily cleaned from the nickel, and does not contain as much mineral oils as Vienna lime.

For the sake of those who are not familiar with the dip used for bluing, let it be said that it consists of 4 oz. of hyposulphite of soda (hypo) and 4 oz. of sugar of lead (acetate of lead) dissolved in one gallon of water. The solution is used boiling hot and the work immersed in it. The color is at first yellow, then purple, and finally blue. When it reaches this condition the work should be rinsed and dried. It must then be lacquered or it will fade. The lacquer, however, protects it so that it will hold its color for many years.—C. W. & M. C. M. Art Journal.

One reason why we are never all allowed to attain the point of complete and permanent satisfaction is, should we do that we would stop making progress, and progress is the most important factor in keeping the world alive and thinking.

The man who goes ahead and does things and says but little about it, is worth two of the man who is always telling about what he can do or what somebody else has done that is superior to what is being done around him at the present time.

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, five cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

HELP WANTED.

Wanted—Traveling men who visit wheelwrights make big commission selling the Waterbury Spoke Extractor as side line. Fine seller. Easy payment plan makes selling easy. Liberal terms. Waterbury Spoke Co., 156 Grand street, Waterbury, Conn.

Wanted—A progressive, industrious, young or middle aged man, experienced in building light high grade vehicles, to take charge of factory. Must be a man of advanced ideas and good designer, systematic, good organizer, one that can produce high grade work at lowest cost. Great opportunity for the right man. Address "E. M. H.," care The Hub, 24 Murray street, New York, N. Y.

SITUATIONS WANTED.

Wanted—Position as superintendent. Twenty years experience in number of factories as mechanic foreman, superintendent and factory manager. Am in the race for producing and economy. Strictly sober and with good reference. Address "Superintendent," care The Hub, 24 Murray street, New York City.

Wanted—Position by a clean-cut young man of 33 and of good habits as salesman for a good reliable carriage or buggy company. Is a practical man; has risen to foreman in blacksmith department; has been on the road some, but found it would be a great benefit to learn the trade and know the points of a job to be successful, and am now open for a position. Reference to character and ability if required. Address Box 974, care The Hub, 24 Murray street, New York, N. Y.

Wanted—Would like to correspond with automobile or motor car company desiring a man of ability as superintendent or foreman of painting department. Can furnish A-1 reference as to character and ability. Address "Painting Department," care The Hub, 24 Murray street, New York, N. Y.

Wanted—Position by experienced foreman blacksmith, carriage or automobiles; organizer; honest and reliable. Desires a permanent position with good manufacturer. Reference A-1. Address Box 24, care The Hub, 24 Murray street, New York, N. Y.

Wanted—Position by experienced draftsman in carriage and automobile factory. Eastern location preferred. Best of reference. Address "J. H. M.," care The Hub, 24 Murray street, New York City.

FOR SALE.

For Sale—One 32-inch Defiance Automatic Spoke Lathe; has had but little service. Price, $200 f.o.b. cars at Rochester, N. Y. Belting & Machinery Co., 299 State street, Rochester, N. Y.

PATENTS.

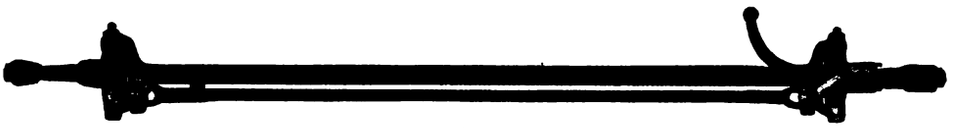
Patents—H. W. T. Jenner, patent attorney and mechanical expert, 608 F street, Washington, D. C. Established 1883. I make an investigation and report if a patent can be secured and the exact cost. Send for full information. Trade-marks registered.

Digitized by Google

WHY IS IT?

That every successful builder of Motor Buggies is using

Timken Axles With Roller Bearings



Rear View.

Square Dead Rear View.

Of course there is a good reason, or such concerns as the following wouldn't continue to use them:

Holsman Automobile Co.
Schacht Manufacturing Co.
Columbus Buggy Co.
International Harvester Co.
Reliable Dayton Motor Car Co.
The Bendix Co.
The Chicago Coach and Carriage Co.
W. H. McIntyre Co., etc., etc.

If you are figuring on building Motor Buggies or are already in the field and would like to know why you should use

Timken Roller Bearing Motor Buggy Axles

we will be very glad to furnish you with facts based upon experience that will prove mighty profitable to you.

Timken Roller Bearings are Guaranteed for Two Years

If interested, write for catalogue and prices.

The Timken Roller Bearing Axle Co.

CANTON, OHIO

BRANCHES: 10 E. 31st STREET, NEW YORK
429 WABASH AVENUE, CHICAGO

Digitized by Google

A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

PPPPPPPPPPPP
OOOOOOOOOOOO
RRR BOLT CLIPPERS RRR
TTT EVERETT, MASS., U.S.A. TTT
EEEEEEEEEEEE
RRRRRRRRRRRR

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

Let us send you Catalogue and Price List.

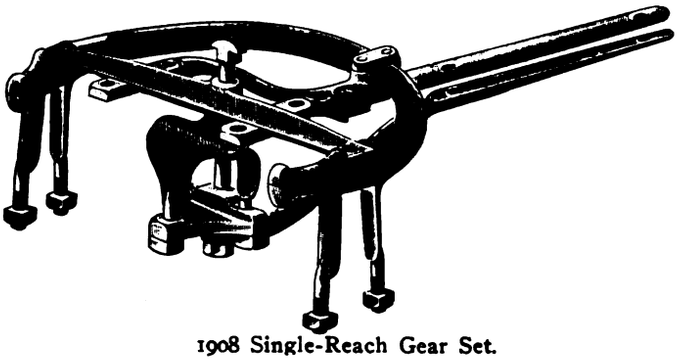
American Roller Bearing Fifth Wheel Co.

745 THIRD AVE., BROOKLYN, N. Y.

INDEX TO ADVERTISEMENTS.

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.

Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland, Pa.

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Digitized by Google

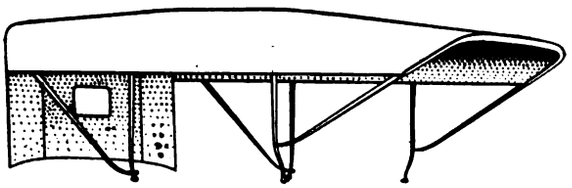
TOPS and Upholstering

FOR

AUTOMOBILES

AND

HORSE VEHICLES



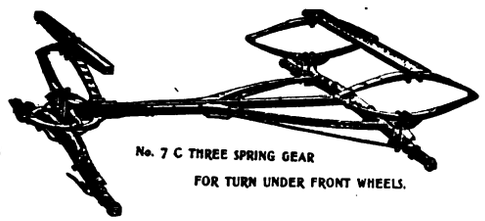
MANUFACTURED BY

Ball Buggy Top Co.

YORK, PENNSYLVANIA

THE OLD RELIABLE AND ONLY SCHUBERT BROS. GEAR CO.

50 Other Styles

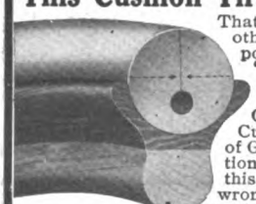


No. 7 C THREE SPRING GEAR
FOR TURN UNDER FRONT WHEELS.

Always address us this way if you wish any of our specialties. Work-in-the-White Bodies, Seats and Gears for Carriages and Automobiles. Special work in bodies promptly attended to. Let us figure with you. **Would you like our Catalogue?**

SCHUBERT BROS. GEAR CO., Oneida, N. Y.

This Cushion Tire is Made of *New* Rubber!



That's one reason it wears so much longer than others. The rubber we use is quoted at $1.30 per pound today. We *could* make tires of old rubber "reclaimed" from the junk pile, that costs 10c a pound, or "Lapori" and "Guayule," that cost 35c a pound, but that kind won't do for a Goodyear. This is the Eccentric Cavity Cushion Tire with canvas guides—a special point of Goodyear construction. You can't get this Goodyear Tire on wrong. The hole-below-center takes the wire outside the zone of motion and prevents wire cutting. Every user can *see* the advantage of the Goodyear at once.

GOODYEAR

Write for booklet on Cushion Tires, explaining construction in detail. Ask for sample section of tire. Do it today. A postal will do.

The Goodyear Tire & Rubber Co.

999 Canal Street, Akron, Ohio

Boston Cincinnati Los Angeles Denver Chicago Philadelphia New York
San Francisco Indianapolis Cleveland Milwaukee St. Louis St. Joseph
Buffalo Detroit Pittsburg Omaha Washington Atlanta
Louisville New Orleans Memphis Dallas Baltimore Kansas City

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.
Dalzell Axle Co., South Egremont, Mass.
Timken Roller Bearing Axle Co., Canton, Ohio.

Bodies, Seats, Etc.
Woodman, Joel H., Hoboken, New Jersy.

Bodies in the White.
Miller Bros., Amesbury, Mass.
Schubert Bros. Gear Co., Oneida, N. Y.

Bolts and Nuts.
Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.
Wiese & Co., Wm., New York City.

Carriage Forgings.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.
Gifford & Son, John A., New York.

Carriage Goods.
English & Mersick Co., New Haven, Conn.
Fairfield Rubber Co., Fairfield, Conn.
Gifford & Son, John A., New York.

Dashes, Fenders, Rails, Etc.
McKinnon Dash Co., Buffalo, N. Y.

Fifth Wheels.
American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Finished Vehicles.
Studebaker Bros. Mfg. Co., South Bend, Ind.

Hubs.
American Wood Block Co., The, Delphos, Ohio.
Koller & Co., J. B., Mechanicsburg, Pa.

Jacks.
Hankinson, J. V., Franklin, O.

Lamps.
Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Machinery and Tools.
Barnes Co., W. F. & John, Rockford, Ill.
Bentel & Margedant Co., Hamilton, Ohio.
Porter, H. K., Everett, Mass.
West Tire Setter Co., Rochester, N. Y.

Miscellaneous.
Standard Oil Cloth Co., New York.

Ornaments.
Palm, Fechteler & Co., New York, N. Y.

Rubber Tires.
Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Kokomo Rubber Co., Kokomo, Ind.
Stein Double Cushion Tire Co., Akron, O.

Shaft Couplings and Anti-Rattlers.
Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Metal Stamping Co., New York City.

Springs and Gears.
Fitch Gear Co., Rome, N. Y.
Indianapolis Bolster Spring Co., Indianapolis, Ind.
National Spring and Wire Co., Albion, Mich.
Schubert Bros. Gear Co., Oneida, N. Y.
Spring Perch Co., Bridgeport, Conn.

Spokes.
Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.
Koller & Co., J. B., Mechanicsburg, Pa.

Trimming Materials.
Stevens & Sackett Co., New Haven, Conn.

Varnishes, Paints and Japans.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Masury & Son, John W., New York and Chicago.
Pierce Co., F. O., N. Y. City.
Smith & Co., Edw., N. Y. City.
Standard Varnish Works, New York City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

White Lead.
Eagle White Lead Co., Cincinnati, Ohio.

Wheels.
Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.

Wheel Stock, Bent Wood, Etc.
Crane & MacMahon, New York.
Koller & Co., J. B., Mechanicsburg, Pa.
Tucker Wood Work Co., Sidney, Ohio.

Digitized by Google

Eccles Ball Bearing Couplings

ALL OUR COUPLINGS ARE SHIPPED OUT WITH TWO PIECE BUSHINGS, FASTENED IN THE COUPLINGS

WHEN BUSHINGS ARE WORN OUT BY LONG USE, THEY CAN BE INSTANTLY REPLACED AND FASTENED INTO THE SOCKET BY OUR SPECIAL PROCESS

Patented Nov. 25, 1902.
Patented June 11, 1907.

THE SPRING IS PIVOTED AT THE FRONT SO THAT IT CAN BE TURNED OUT OF THE WAY OF THE WRENCH WHILE CLIPPING COUPLING TO THE AXLE.

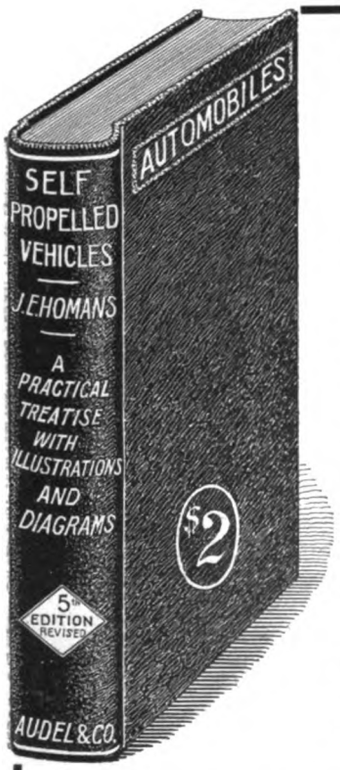
No Lost Bushings when you Use Our Couplings

We Make a Full Line of Carriage and Wagon Forgings

RICHARD ECCLES COMPANY

Catalogue No. 15 is our latest

AUBURN, NEW YORK



"Self-Propelled Vehicles"

Fifth Edition, Revised.

A practical treatise on the theory, construction, operation, care and management of all kinds of Automobiles.

By

JAMES E. HOMANS, A.M.

Contains 608 pages and upwards of 500 illustrations and diagrams, giving the essential details of construction and many important points on the successful operation of the various types of motor carriages driven by steam, gasoline and electricity.

This work is now the accepted standard, explaining the principles of construction and operation in a clear and helpful way. This book will be sent postpaid to any address in the United States, Mexico or Canada upon receipt of $2.00.

Address

TRADE NEWS PUBLISHING COMPANY

24 Murray Street, New York

J. B. Koller & Company

Manufacturers of all kinds and sizes of

Finished Spokes and Bent Rims

Also all kinds of

SLEIGH, SLED AND BOB SLED RUNNERS

MECHANICSBURG, PA.

MILLER BROTHERS

Builders of

CARRIAGES

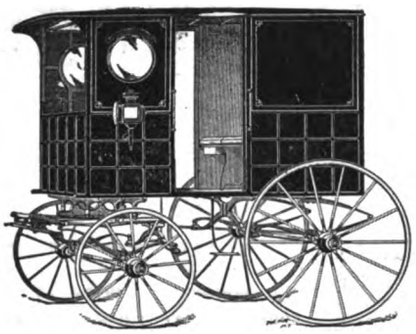
IN THE WHITE

AND

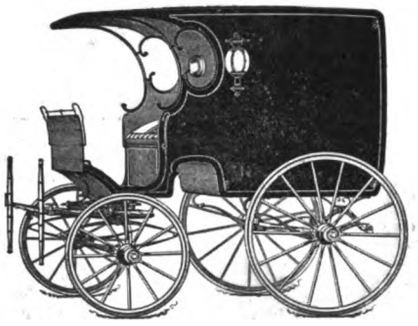
Automobile Bodies

AMESBURY, MASS.

Digitized by Google

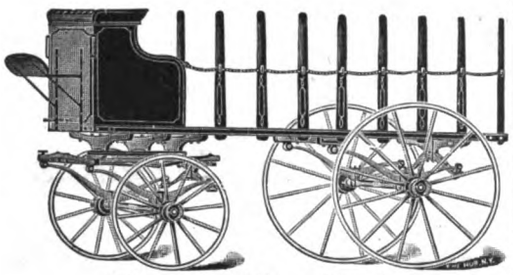


No. 112.—Milk Wagon.



No. 111.—Altman Wagon.

No. 113.—Grocery Wagon.



No. 122.—Flour Truck.

Electrotypes

of the vehicles presented on this page will be forwarded on receipt of

75 cts.

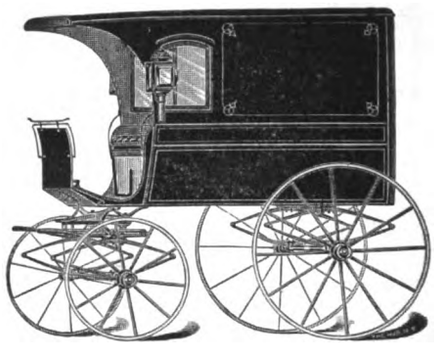
for each cut, to any address. Postage prepaid.

Catalogue

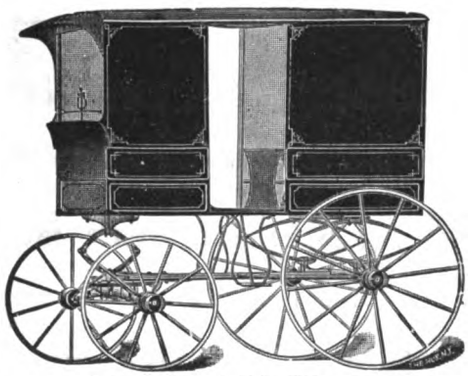
containing nearly 200 illustrations of carriages, wagons, sleighs, and miscellaneous cuts will be sent upon application.

Trade News Publishing Co.

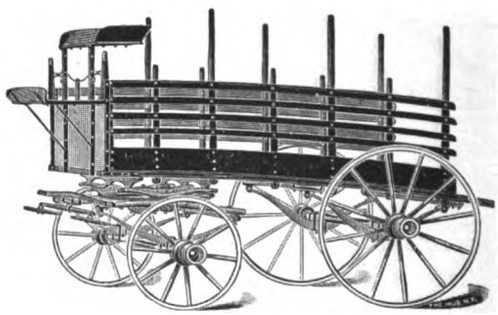
24-26 MURRAY ST.
NEW YORK



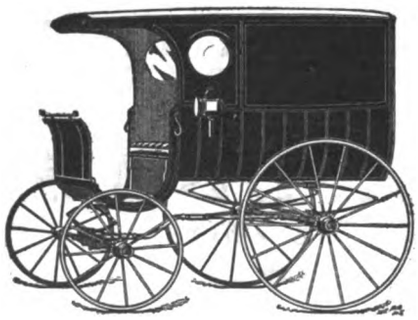
No. 115.—Delivery Wagon.



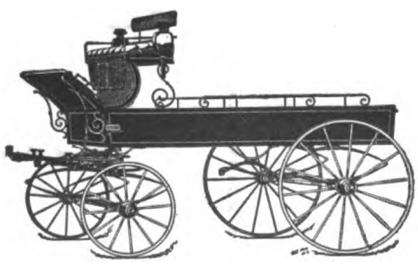
No. 116.—Milk Wagon.



No. 117.—Merchandise Truck.



No. 114.—Delivery Wagon.

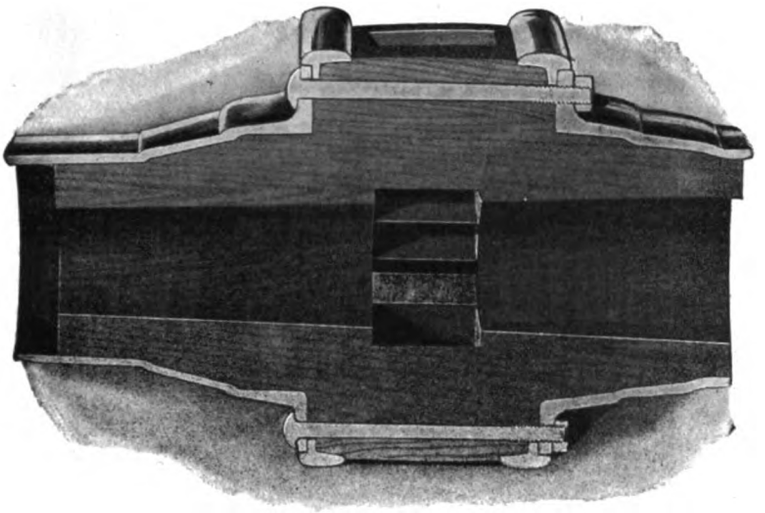


No. 124.—Delivery Wagon.

No. 118.—Ambulance.

Digitized by Google

The American Wood Block Co., Delphos, O.



SECTIONAL VIEW.

GILLETTE'S

"IDEAL"

HUB

It stands the Racket

The **IDEAL** hub makes the strongest wheel. Repairs are less than on any other style; actual use has proven these facts.

IDEAL is metal protected, wood to wood center, means elasticity; simplicity of construction, easily and quickly repaired, driven spokes best of all, no metal to corrode.

IDEAL has the patented inverted flange that prevents lateral strain.

IDEAL means less tire resetting.

Try it—it is guaranteed.

We want the wheel makers to use the **IDEAL** in their wheels.

The American Wood Block Co.

DELPHOS, OHIO

HUB BLOCKS **HUBS** **DIMENSION STOCK**

Hub Blocks

Green—Air and Kiln Dried. Sold by grade or timber run. Compressed blocks or otherwise. 3 in. to 12 in. diameter. Stock kept up to standard quality and ready for shipment at all times.

The Fairfield Rubber Co.

Manufacturers of Carriage Cloth, Imitation Leather, etc. For Automobiles and Carriages

Fairfield - - - Connecticut

ESTABLISHED 1886.

Correspondence School of Carriage and Motor Carriage Drafting

A thorough, practical tuition is given through this correspondence school. The theory and practice of construction, bookkeeping, perspective. Many men now hold good positions through taking the courses of instruction.

Principal, THOS. MATTISON,
Hillside Avenue, Bitterne Park,
Southampton, England.

Author of "The Coach Body Makers' Guide," $3.00; a practical treatise on "The Suspension of Carriages," "Bookkeeping," and other carriage building works.

The most power to the weight car of any of this type now on the market.

SIMPLE, DURABLE AND RELIABLE

Four years of success. Write for catalog and prices

THE BUGGYCAR CO.

ARMORY AND JOHN STREETS

CINCINNATI :: :: :: :: OHIO

Digitized by Google

WM. WIESE
With Hardt, Von Bernuth & Co.
Since 1883.

WM. WIESE & CO.

ALBERT MAERTENS
With Hardt, Von Bernuth & Co.
Since 1894.

Formerly Carriage Goods Department of HARDT, VON BERNUTH & CO.

Carriage and Automobile Linings and Livery Cloths

Sole Agents in the United States for
WULFING'S CARRIAGE CLOTH AND EL DE BARAN GOATSKIN

66-68 Greene St., New York

IF the best enameled oil cloth is none too good for your carriage tops, then insist on getting MERITAS—the kind that lasts the longest.

Every yard guaranteed by our trademark on the back.

See your jobber.

Standard Oil Cloth Co.
320 Broadway New York

HEADQUARTERS FOR CARRIAGE BUILDERS.

Let us offer you the most delightful hotel accommodation at moderate cost.

HOTEL EMPIRE

B'way 63d St.

NEW YORK CITY

In the centre of everything worth while.

Restaurant noted for its excellent cooking, efficient service and moderate prices

Rooms (use of bath)..$1.50
Rooms (with bath)... 2.00
Suites (with bath).... 3.50

FIVE MINUTES WALK TO SHOPPING AND AMUSEMENT CENTRES

All Street Cars—One Minute to "L" and Subway

Send for Guide of New York, Free

W. JOHNSON QUINN, Prop.

Our Carriage or Spring Edge Cushion Frame

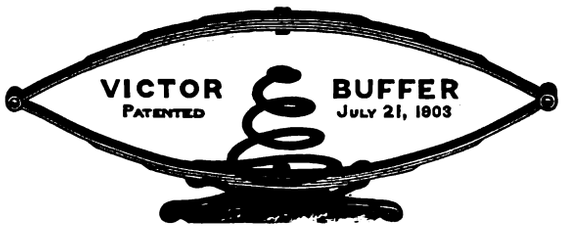
Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

For Weak or Overloaded Springs.

VICTOR STEEL SPRING BUFFERS

Save wagon, prevent breakdowns, and add materially to the carrying capacity. If your dealer does not have them write to us direct.



Made in Four Sizes: 0, 1 1-4 in. spring & under; 1, 1-4 in. to 1 1-2 in. spring; 2, 1 1-2 in to 2 in. spring; 3, 2 in. to 2 in. spring.

Carrying capacity of each spring: No. 0, 400 lbs.; 1, 750 lbs.; 2, 1000 lbs.; 3, 1250 lbs.

Manuf'd by INDIANAPOLIS BOLSTER SPRING CO.
INDIANAPOLIS, INDIANA.

CARRIAGE STRAPS

All kinds of strap work for carriage builders. Our capacity for work of this kind is practically unlimited. For quality and price we beat the world. Send sample and let us quote prices. -:- -:-

J. C. DECKER = = = = Montgomery Penna.

Digitized by Google

THE BRADLEY SHAFT COUPLING

OPEN

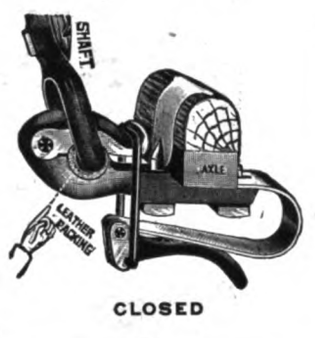
Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME!

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

C. C. BRADLEY & SON, Syracuse, N. Y.

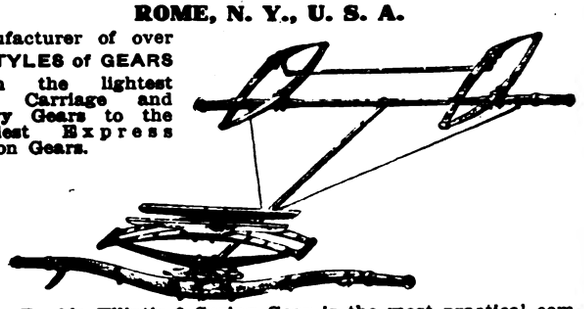


CLOSED

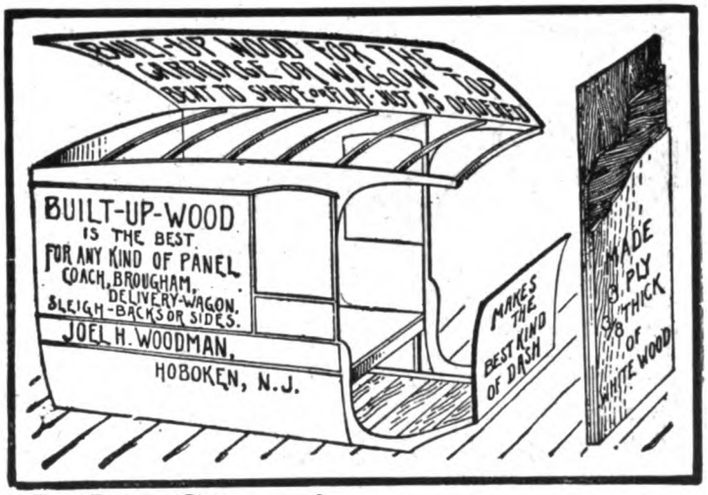
FITCH GEAR COMPANY

ROME, N. Y., U. S. A.

Manufacturer of over 40 STYLES of GEARS From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.



The Double Elliptic 3-Spring Gear is the most practical combination business and pleasure gear on the market, and is equipped with Wrought or our Common Sense Short Turn Fifth Wheel. Send for our No. 24 Catalogue.



Time Has Told the Story!

Service and satisfaction always follow our rolling stock

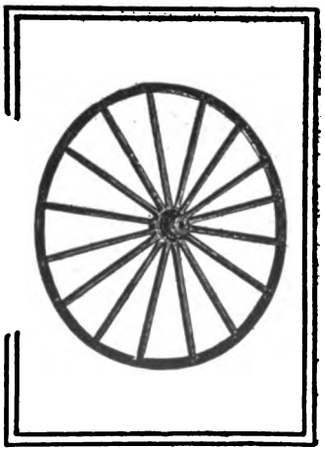
WHEELS

ALL KINDS—BEST QUALITY

Also RIMS and SPOKES

The Eberly & Orris Mfg. Co.

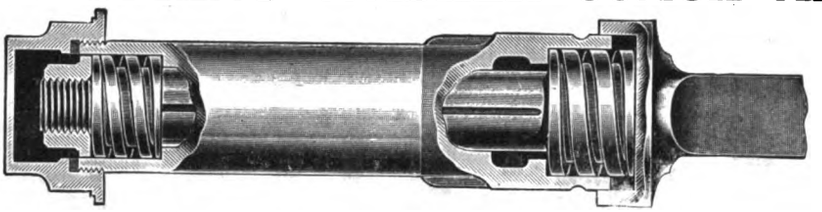
MECHANICSBURG, PA.



Please mention "The Hub" when you write.

Digitized by Google

PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

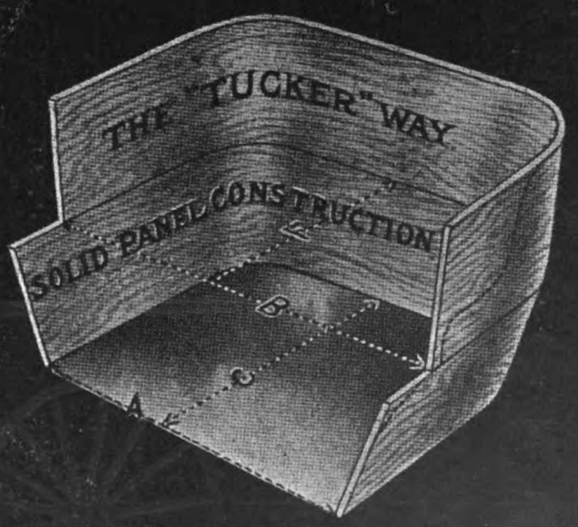
DALZELL AXLE CO., South Egremont, Mass.

BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

SOLID BENDINGS



MAKE FAULTLESS SEATS

CATALOG "H" SHOWS SIZES

WRITE FOR IT

THE TUCKER WOODWORK CO. SIDNEY, OHIO.

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway Station, 53d St. Elevated and all Surface Lines.

Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIREPROOF

STRICTLY FIRST-CLASS

RATES REASONABLE

All Hardwood Floors and Oriental Rugs.

Ten Minutes Walk to Twenty Theatres.

Transient Rates, **$2.50** with Bath, and up.

Excellent Restaurant. Prices Moderate.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

Please mention "The Hub" when you write.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

C. T. RAYNOLDS & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

Bimel-Ashcroft Manufacturing Company

Main Office, POPLAR BLUFF, MO.

Factories:
POPLAR BLUFF, MO.
MOREHOUSE, MO.
DERMOTT, ARK.
LOUISVILLE, MISS.

Foreign Correspondence Solicited.

SPOKES

OUR GROWTH

1902—1,310,241 Spokes

1903—3,240,185 Spokes

1904—5,485,748 Spokes

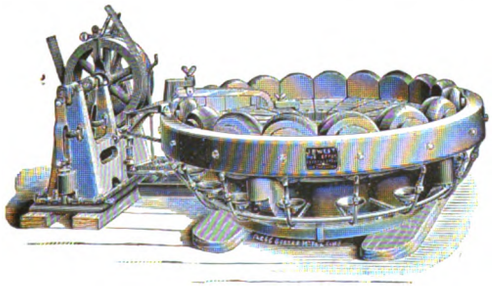
1905—7,845,653 Spokes

1906—7,927,759 Spokes

1907—7,748,839 Spokes

Our New Plant Increases Our Capacity to 12,000,000 Spokes

THE FIRST TIRE SETTER



you ever heard of was a **"WEST"**—probably, for they were on the market several years before any other and you are hearing more about them every year. Many of the older users are loudest in their praise. That's because they stand the test of time—they're made that way. Some of our Hydraulic machines have been **in use fourteen years** and are doing as good work now as when first installed. **Now**, we don't claim our machines are best simply because they have been longest on the market, **but because** we have been making a study of cold tire setting all these years and improving our machines as experience and observation taught us, and when you buy a **"West Hydraulic"** you get the benefit of this experience. Some people knowing **our** machines would set tires cold satisfactorily, thought some other would do as well—and the price was cheap—also machine. Now they wish they had bought a **"West Hydraulic." If you make a similar mistake it's your own fault.**

Buy a **"West Hydraulic"** and be happy. Hand or Power machines.

THE WEST TIRE SETTER COMPANY, Rochester, N. Y.

Digitized by Google

No. 140 Solid Foot

OUR No. 140 DASH

SOLID FOOT OR ADJUSTABLE
WITH SOLID WELDED RAISED RAIL

Japanned or Nickle Plated

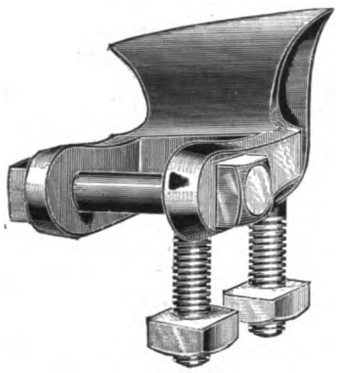
IS A GOOD SELLER

McKINNON DASH COMPANY

Cincinnati, O.
Troy, O.

Buffalo, N. Y.

St. Catharines
Ontario



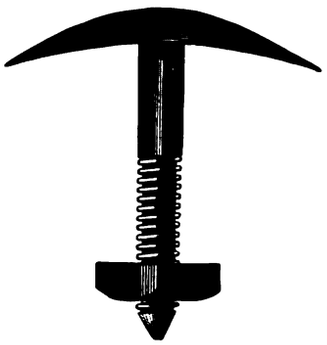
Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips ⅝ or ¾ width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

1908 Catalog "H" on application.

COLUMBUS BOLT WORKS, Columbus, O.



Kokomo Solid Rubber Tires

¶ In rubber substance the Kokomo Solid Rubber Vehicle Tire is truly **SOLID.**

¶ Solid with the pure stock that has made them an exception to the ordinary tires of commerce.

¶ In Kokomo quality there is an established standard that is recognized as the highest ideal of tire construction. The Kokomo is a standard tire in every respect.

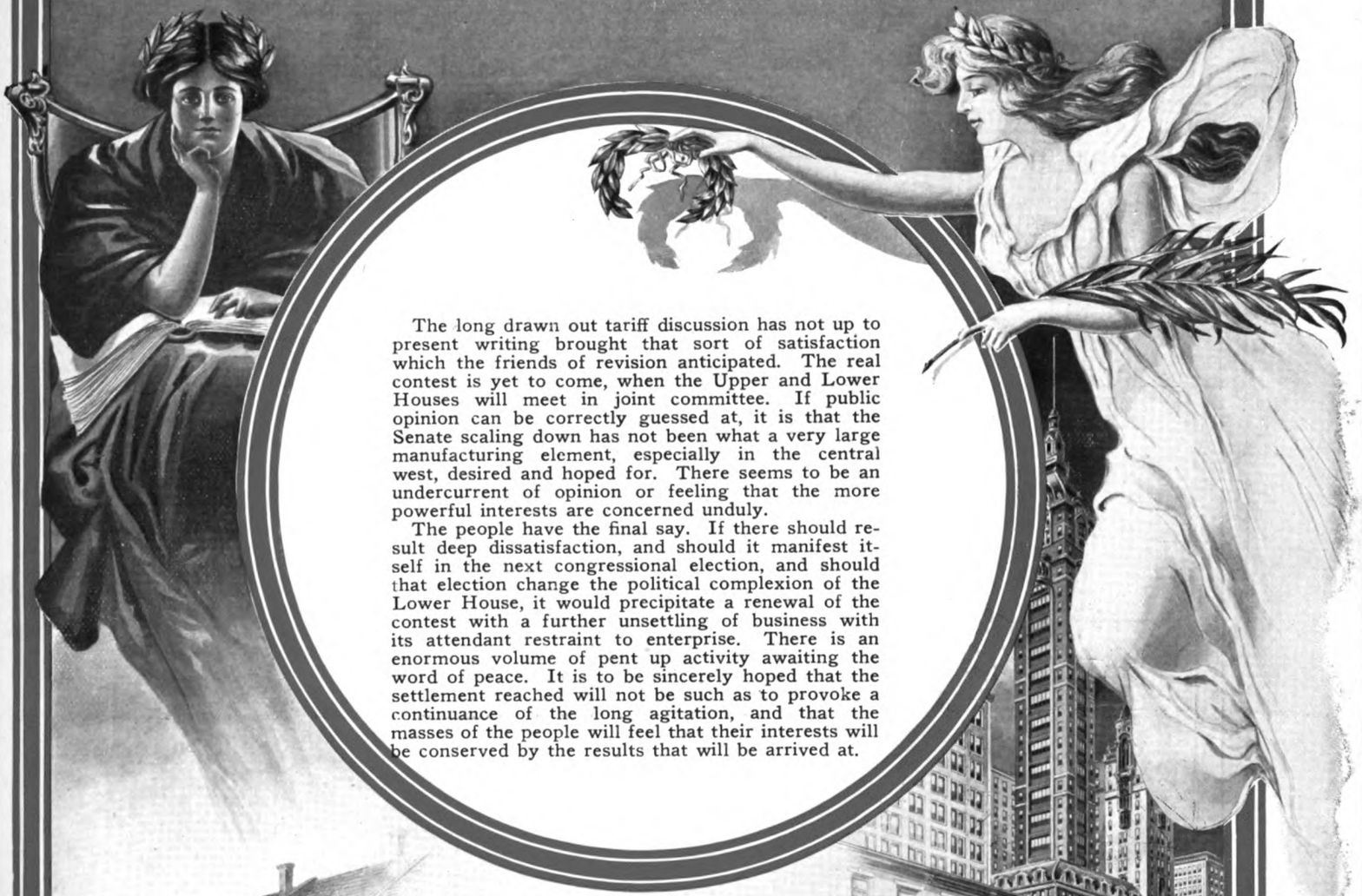
¶ Kokomo Tires always score in the running, and the longer the test the more convincing the results.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google

The Hub



The long drawn out tariff discussion has not up to present writing brought that sort of satisfaction which the friends of revision anticipated. The real contest is yet to come, when the Upper and Lower Houses will meet in joint committee. If public opinion can be correctly guessed at, it is that the Senate scaling down has not been what a very large manufacturing element, especially in the central west, desired and hoped for. There seems to be an undercurrent of opinion or feeling that the more powerful interests are concerned unduly.

The people have the final say. If there should result deep dissatisfaction, and should it manifest itself in the next congressional election, and should that election change the political complexion of the Lower House, it would precipitate a renewal of the contest with a further unsettling of business with its attendant restraint to enterprise. There is an enormous volume of pent up activity awaiting the word of peace. It is to be sincerely hoped that the settlement reached will not be such as to provoke a continuance of the long agitation, and that the masses of the people will feel that their interests will be conserved by the results that will be arrived at.

Oldest Carriage Journal in the World

1858 1909

CURLEY N.Y.

Vol. LI. No. 3 JUNE, 1909

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

C. A. WILLEY COMPANY

Color Grinders

AND MANUFACTURERS OF

SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.

WILLEY'S SUPERFINE C COACH & CAR SPECIALTIES COLORS TRADE MARK

92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.

CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

ESTABLISHED IN 1791

Wm. Harland & Son

Beg to announce that they have removed their United States Headquarters to Genesee Street and Erie Canal, Buffalo, N. Y.

Wm. Harland & Son

IMPORTERS OF

Harland's English Varnishes

FOR

Coach and Automobile Builders, Railway and Street Car Finishing

AND MANUFACTURERS OF

High Grade Varnishes for all Purposes

FACTORIES:

MERTON, LONDON, S. W., ENGLAND.

GENESEE STREET and ERIE CANAL, BUFFALO, N. Y.

400 EASTERN AVENUE, TORONTO, ONTARIO.

Western Branch, 40 Dearborn Street, Chicago. C. H. Schooley, Manager.

General Manager United States and Canada, H. Hagger.

Please mention "The Hub" when you write.

Digitized by Google

JOHN W. MASURY & SON

MANUFACTURERS OF

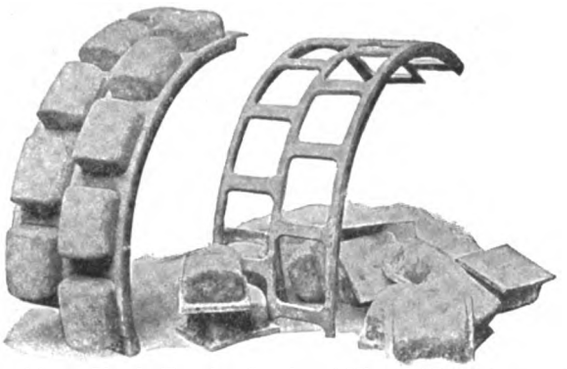
Superfine Coach Colors and Varnishes

NEW YORK——AND——CHICAGO

SOLVED!

Is the way the motor car experts express themselves on the subject of tires for commercial motor vehicles after seeing and using the :: :: :: :: :: ::

KELLY-SPRINGFIELD SECTIONAL TIRE



Double or Single Track. Sectional View of Double Track.

Patented May 17, 1898; April 9, 1901.

With a grip on the road that means progress and security from the fault of solid tires—that of crowding the rubber ahead under load, which means disintegration—the motor wagon and truck owner will find in the Kelly-Springfield Sectional Tires the best tire for all heavy cars. Each section is dependent upon itself. If interested, write :: :: :: ::

CONSOLIDATED RUBBER TIRE COMPANY

NEW YORK, N. Y.—and—AKRON, OHIO

Branches:

BOSTON CHICAGO PHILADELPHIA ST. LOUIS DETROIT CINCINNATI SAN FRANCISCO

Digitized by Google

TO CONSUMERS OF BLACKS :

The intensity of blackness of bone black for use in fine coach colors, etc., depends upon the temperature at which the bones are burned. The higher the temperature, the denser and blacker the product.

Unfortunately this very dense and intense black is extremely deficient in covering power, and it is therefore the practice to burn the bones to an intermediate point, so as to obtain the greatest covering power at a sacrifice of the intensity of the color, due to the presence of organic and mineral impurities that tend to develop a brownish cast in the black, also a tendency to thicken after the addition of thinners.

We have succeeded in perfecting a process of grinding under water and subsequent treatment, whereby these impurities are eliminated, thus obtaining a black of the maximum covering power, coupled with great intensity.

The elimination of the impurities also prevents any livering or thickening of the black after thinning.

We believe our black now superior to any other on the market, for the reason that being grinders, we know the ideal of the consumer, and through chemical and mechanical means have been able to produce this ideal.

F. O. PIERCE COMPANY,
New York, N. Y.

Right Varnish Makes
Satisfactory Vehicles

Carriages, buggies and other vehicles that satisfy must not only be well made, they must also be **well varnished.** Your reputation and your profits depend upon the varnish you use. You can make no mistake by using

Standard Varnish Works' Varnishes

They are the standard of excellence because they represent a

Unity of Color, Lustre, Working, Drying and Wearing Properties

Of those not using these varnishes we ask for an opportunity to prove the validity of our claims

STANDARD VARNISH WORKS

CHICAGO NEW YORK LONDON BERLIN BRUSSELS

INTERNATIONAL VARNISH COMPANY, Ltd., Toronto

Please mention "The Hub" when you write.

Digitized by Google

VALENTINE VARNISHES

VALENTINE & COMPANY
New York Chicago Boston Toronto Paris Amsterdam

LAWSON VARNISHES

☞Valentine's Coach Colors are standard because dependable☜

DECALCOMANIE

Tranfers for all Purposes

Scrolls, Figures, Flowers, Letters, Animals, Stripings, Numerals, Corners, etc.

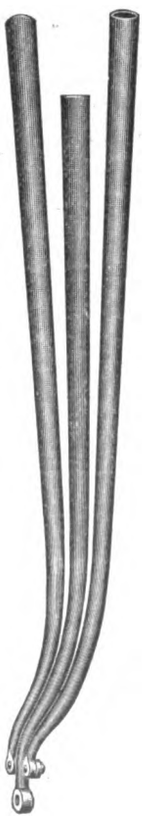
Special Name Plates of all descriptions. Buggy Ornaments in sets.

Beautiful Scroll Effects for ceiling work in Limousine bodies; also a large and attractive line of **Plaid Designs** for panels in automobiles. Every live manufacturer should look up this proposition. Nothing is more effective in body embellishment. **Cane Work Transfers** are also a big specialty with us. Name your wants and let us talk with you. New catalogue will soon be ready and will be sent with cash orders of $1.00 or more. No paint shop is complete without our catalogue.

Palm, Fechteler & Co

67 Fifth Avenue, New York

Chicago St. Louis Montreal Toronto



YOU will have to put offset bow sockets on all of your Auto Seats next season.

Don't get the idea that any old crook or kink will go. They must be uniform.

We offset the first auto bow sockets, and have been doing it ever since.

No extra charge for our experience.

Cortland Forging Company

CORTLAND, NEW YORK

Digitized by Google

Our No. 25

Automobile Door Lock has made good. It is a safety-hook lock that can be operated entirely by the lever attachment as well as by the outside handle. It is all steel and drop forgings—no tender or treacherous malleables to go wrong at the critical moment.

We will be pleased to tell you more about it—and the price—at your convenience.

The English & Mersick Co.

New Haven, Conn.

82 Years' Experience in Every Can

E.S. 1827 &CO. **Edward Smith & Co.**

CARRIAGE VARNISHES

Everything from the
Bare Wood to the Finishing Coat.

CHICAGO **NEW YORK**

HOTEL EARLINGTON

55 WEST 27TH STREET
Near Broadway, NEW YORK

This well known, absolutely fireproof hotel, after being entirely renovated, redecorated and fitted up complete with new plumbing has now reopened.

Rates from $1.00 and Up
With Bath, $5.00 and Up

Special rates by the season or year for permanent guests. A special feature will be the cuisine, both in the dining room and in the new cafe for ladies and gentlemen. A la Carte and Table d'Hote.

Hotel under the management of

GUERNSEY E. WEBB
Formerly of the Ansonia.

FOR AN EASY RIDE

AROUND THE WORLD

THAT

Stein Double Cushion Tires

ARE KNOWN

"Around the World"

for that Quality, which embodies

Toughness, Strength, Durability and Resiliency

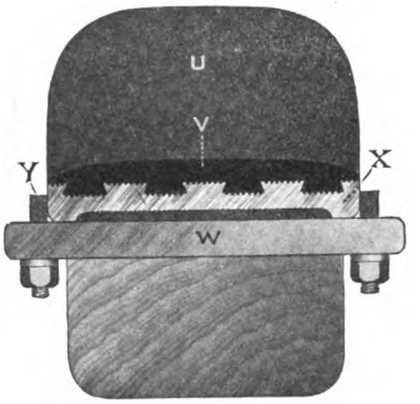
A combination that has made them famous.

STEIN DOUBLE CUSHION TIRE CO.

AKRON, OHIO

Digitized by Google

The Goodrich "WIRELESS" Motor Truck Tire



Wherein it possesses marked advantages and why it should appeal favorably to every user of Motor Trucks.

The tire consists of three factors: A special steel base (X) with dove-tailed grooves on the top surface; a hard rubber sub-base (V) which is inseparably united with the steel base; and a soft rubber tread (U) or tire proper, inseparably vulcanized upon the hard rubber sub-base. The tire is held in place on the felloe-band (W) by means of lugs (Y) on either side of the steel base, and a key on the felloe band which fits into a key seat on the steel base of the tire, and prevents circumferential movement. Thus the fastening point of the "Wireless" tire is steel to steel and absolutely secure.

ADVANTAGES:

The Goodrich "Wireless" tire affords the following advantages over all other type of motor truck tires:

(1) **Increased mileage,** because it affords a maximum external abrasion without affecting its fastening to the wheel.
(2) **Decreased cost per mile,** because it will give more mileage in proportion to its cost than any other rubber truck tire.
(3) **Freedom from repairs,** because the component factors form an inseparable unit and thus eliminate the usual hinging action of the rubber over internal metal fastenings.
(4) **Simpler method of applying,** because no complicated machine is necessary. This can be quickly and easily done with simple tools which we furnish.
(5) **Better service from the dual type,** because of decreased width of tread over all, affording maximum contact with road surface, and more perfect distribution of weight upon the spokes.
(6) **Adaptability to standard wheel sizes,** because the Goodrich "Wireless" tire may be applied to any wheel at present made for solid rubber motor truck tires.

Information regarding sizes, prices, discounts, etc., upon application.

The B. F. Goodrich Company
Akron, Ohio

BRANCHES IN ALL LARGE CITIES.

Digitized by Google

The Hub

Copyright, 1909, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. LI. JUNE, 1909. No. 3.

THE TRADE NEWS PUBLISHING CO. OF N. Y
Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

REPRESENTATIVES:

J. Henry Klunk. J. G. Tanner.

Other Publications of Trade News Publishing Co.:

HARNESS (monthly) .....per year, $1.00

AMERICAN HARNESS AND SADDLERY DIRECTORY (annual) .....per copy, $4.00

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

Credit.

The credit system, once an absolute necessity when the aggregate volume of business capital was limited, has of late years become less a necessity. Year by year a larger volume of business is being done for practically cash, for two reasons. First, cash is available, and, second, cash methods are found cheaper than credit methods. When cash methods were first proposed a few years ago a great outcry was made against it, because it was claimed that it was impossible; that it was unnecessary, and that it would be upsetting established and satisfactory business methods. The conditions which made a credit system necessary are disappearing, but the system is clung to by thousands of business men, because of its supposed advantages. General wealth has now accumulated to a point where bank accommodations can make spot cash payments between dealers and manufacturers possible. To this it may be replied that it is only shifting the burden, and that bank credits replace obligations between business men. Even were this the case, it would be an advantage in enabling dealers and middlemen to buy to better advantage. As it is, banks are now carrying many large manufacturing interests which in turn are carrying on universal volumes of accounts and notes.

It is possible to get rid of one of these taxes on industry, namely the latter, the carrying of large obligations between manufacturers and their distributing agencies. The chief difficulty in the way lies in overcoming the credit habit, for its supposed advantages. Cash methods have made less progress among carriage builders than among implement dealers, but both lines are now better able to pay cash than a few years ago. The drift is slowly in the direction of cash. The trouble is largely unwillingness rather than inability.

Some distributors of vehicles and implements have adopted the plan of buying what they can pay for at the time, under a stipulation or option that subsequent orders will be filled at the old price. This could not be so easily done a few years ago, when business was at fever heat, and when distributors were obliged to order all they expected to sell at the opening of the season. The depression has done one good thing in making it possible to have orders filled promptly at any time. It is this fact that is working to the further adoption of cash payments. But behind all lies the disposition, which must be overcome, to buy on time when there is so much less necessity to buy that way.

A Business Organization.

The Carriage Manufacturers' Association of America did not have to map out work for itself. It sprang into existence as a necessity. Modern business conditions made its field, and it has gone about the prosecution of its work in a manner and with a degree of energy and practical ideas that must commend itself to every carriage builder. The appointment of a thoroughly practical business man as secretary, who is in touch with all the conditions which he will have to face, is an important step. There is a vast amount of work to be done, not the least of which will be the creation of better mutual understandings between manufacturers, jobbers and dealers.

It is a business organization, and business results will be looked for. The passage of yard-long resolutions at annual meetings will mean something more than the paper and ink used. The secretaryship will be the means of making effective what everybody agrees is right and desires to bring about. One of the indirect effects will be the toning down of competition and remotely the getting of better prices.

Some Other Substitute.

It is certainly not very encouraging to be told that we will have to wait for seventy to one hundred years for 12-inch hickory. Conditions may so change in that long time that hickory will have long since ceased to be a necessity, such as we now regard it. The only thing for us to do at present is to use what we have more sparingly and with more differentiation as to its purposes. With an annual net growth of hickory represent-

Digitized by Google

ed by one hundred and eighty-six and an annual consumption represented by four hundred, it is not difficult to figure out the necessity of a substitute which is not now in sight. Yet there are 1,000,000 vehicles and 75,000 automobiles crying to be brought into existence each year, the number increasing annually. With 400 billion feet of hardwoods, and of which only twelve billions is hickory, in growth, it is clear that science and inventive talent has no time for slumber. That something will be found to take the place of hickory, may seem to the carriage builder preposterous. But let him look at the position occupied by cement to-day in construction, to steel in the building and railroad construction, which was not dreamed of half a century ago.

Raw material is everywhere passing to the rear. Composite products are coming to the front. There will be a long gap between the cutting of the last hickory tree and the cutting of the hickory that is planted to-day. And when that new hickory tree is cut, the people of that day will have forgotten there ever was such a timber as hickory.

Shape.

Somehow or other the French carriage builders are able to develop new and pleasing outlines in carriages which have always been beyond British and American builders. Some of their quite recent work attracted and aroused the admiration of the visiting members of the British Institute of Carriage Builders. The philosopher has never lived who could explain why it was that shape appeals to the intellect, to its artistic sense, to its artistic eye. Shape, when idealized in the human form, arouses every feeling for simple attention to passion. Shape is the basis of the conception of beauty. Just why one shape should arouse the instincts which lead to admiration rather than another or some other shape, is beyond the ken of philosophers. Yet the artistic mind, especially in carriage construction, is constantly straining after new form and shape to gratify that deep, mysterious element in our nature which finds delight to the eye and sense in some new tracing of construction lines.

There is limitless range for artistic skill between the straight line and the circle—the two geometrical extremes, wherein shape gambols and plays tag with our cultivated senses. It is not within the power of all the sciences that were ever known to design or construct or devise that which will meet our ideals. The eye is above science: its dictum, or what pleases it, makes art.

A Thriving Industry.

The wheel making industry seems to thrive while other branches of accessory interests flag more or less. New wheel making concerns are springing up, and in some instances a stronger and more reliable wheel is assured. Wheels are the most vulnerable part of the vehicle, under the greatest strain, and naturally respond quickest to internal defects or defects of construction or extreme wear.

The very strong guarantees that accompany certain makes of wheels perhaps accounts for their prominence. Certainly the art of wheel making has improved. The old-time carelessness in the selection of material is no more. All methods of handling from the timber to the construction shop have been improved gradually, until now there seems to be no feature in the details of construction which has been left unattended to. If there are fewer wheel makers in the future it will be because the severe requirements of travel and traffic have been minutely studied out and all elements of possible weakness eliminated. The excellence and endurance of the old hand-made machines of two or three generations ago are coming back.

The Knotty Problem.

The need of the hour is more loyalty among employees to their employers, not especially in the carriage industry, but in all industries. It is to be regretted that there is a spirit of antagonism and an overbearing disposition manifested by certain large aggregations of employers against organized labor. No political economist has ever shown how labor can equitably share in the products of the shop. The miners of coal and the makers of steel have come nearest to equity. This is possible where a few employers have to deal with a large body of organized workmen.

It is in the lesser industries, where employers are sharp competitors and where labor is only partially united, that difficulties in maintaining constantly friendly relations are encountered. It is among this class of employers that sentiments of hostility to organized labor is chiefly found. The need of the day and hour is more loyalty to employers. The strongest organizations of labor are the most conservative in demands and in their readiness to yield to arbitration. Loyalty comes as a result of a more intelligent comprehension of rights and duties. Employers' associations, like the one of which Mr. Parry was the honored and truly conservative head, have need of patience and temperate councils in the solving piece by piece of the knotty little and big problems that are being constantly presented to employers.

Wagons.

Every obstacle in the way of selling farm wagons, especially at a decent profit, has apparently been overcome. The advance in wagons has been made and the advance holds. For some reason or other wagon buying for a year past has been put off as much as possible. In the meantime cost of material has advanced as compared to three years ago. The organization of a national association created confidence among manufacturers. This was followed by a friendly showing up of the cost of wagon building, which in itself strongly impressed the manufacturers with the absolute necessity of getting more money for their work. In some quarters this was regarded as the work of the association. It was not. It was due simply to the general recognition by the organized wagon builders that more money for their work was an actual necessity.

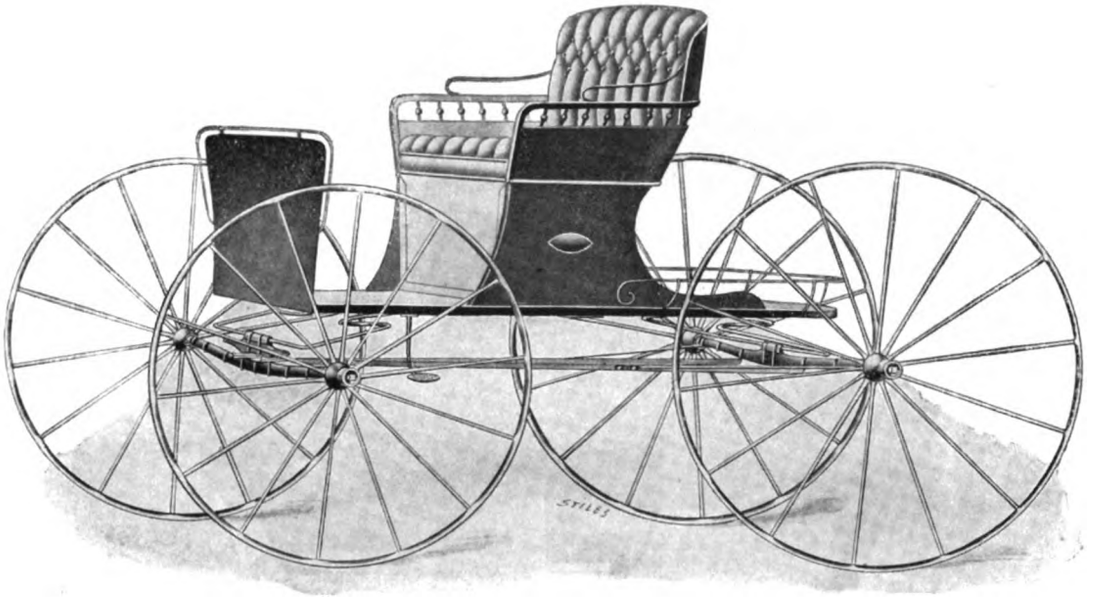
Out of this grew the advance, and, as usually happens, the advance has stimulated wagon ordering, or, to be more exact, distributors of wagons are preparing to stock up more freely as soon as the present growing season is over. Wagons under the recent advance are the cheapest things on wheels in the market. The withheld demand of the past year will probably manifest itself during the summer in orders and contracts, which will restore the wagon building industry in large measure to its rightful position as to prices and volume of business.

Same Rule in the East.

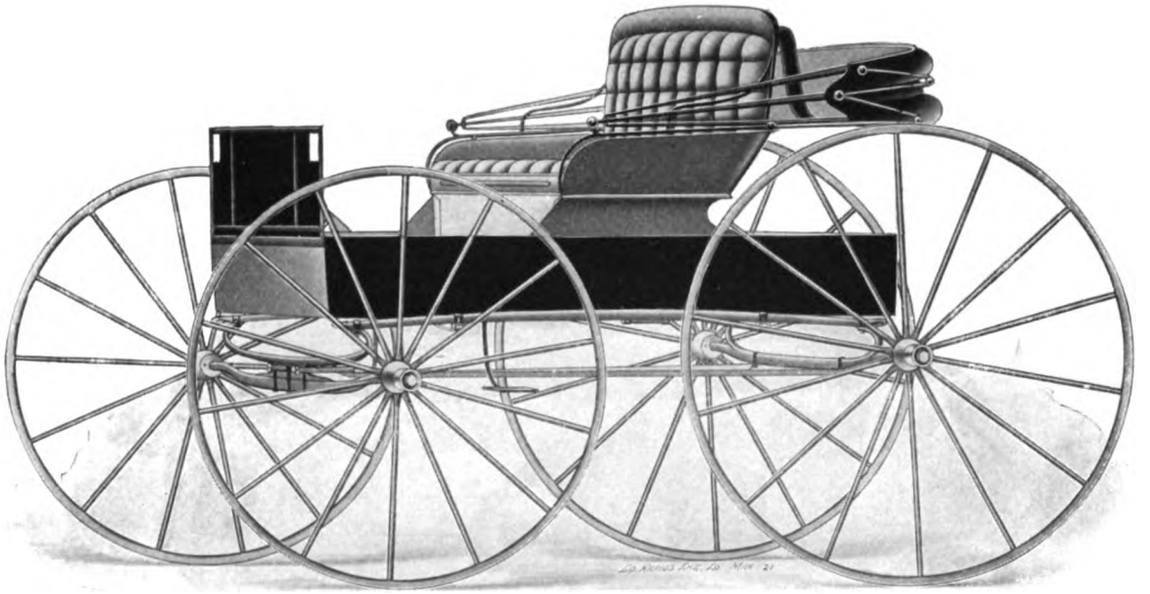
The extension of the rules on crating vehicles to eastern territory, which will go into effect about the middle of August, will be welcome news to the eastern carriage builders. This allows due notice to builders to prepare and be prepared for the desirable change.

Digitized by Google

Illustrated Carriage Section, June, 1909

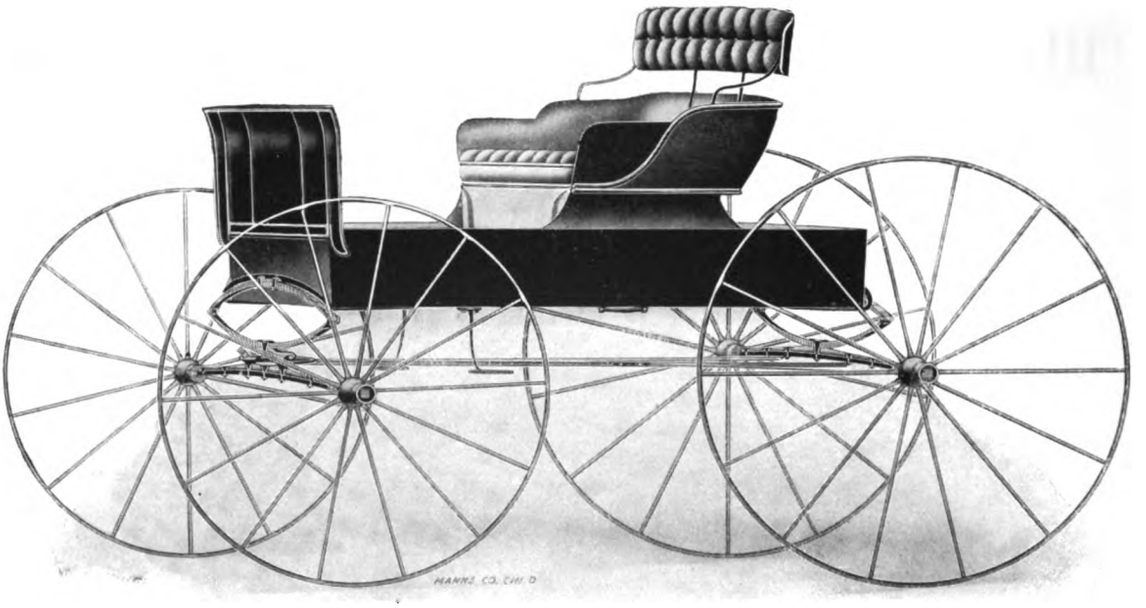


BUCKBOARD WITH SHULER SPRINGS.
Built by Owosso Carriage & Sleigh Co., Owosso, Mich.

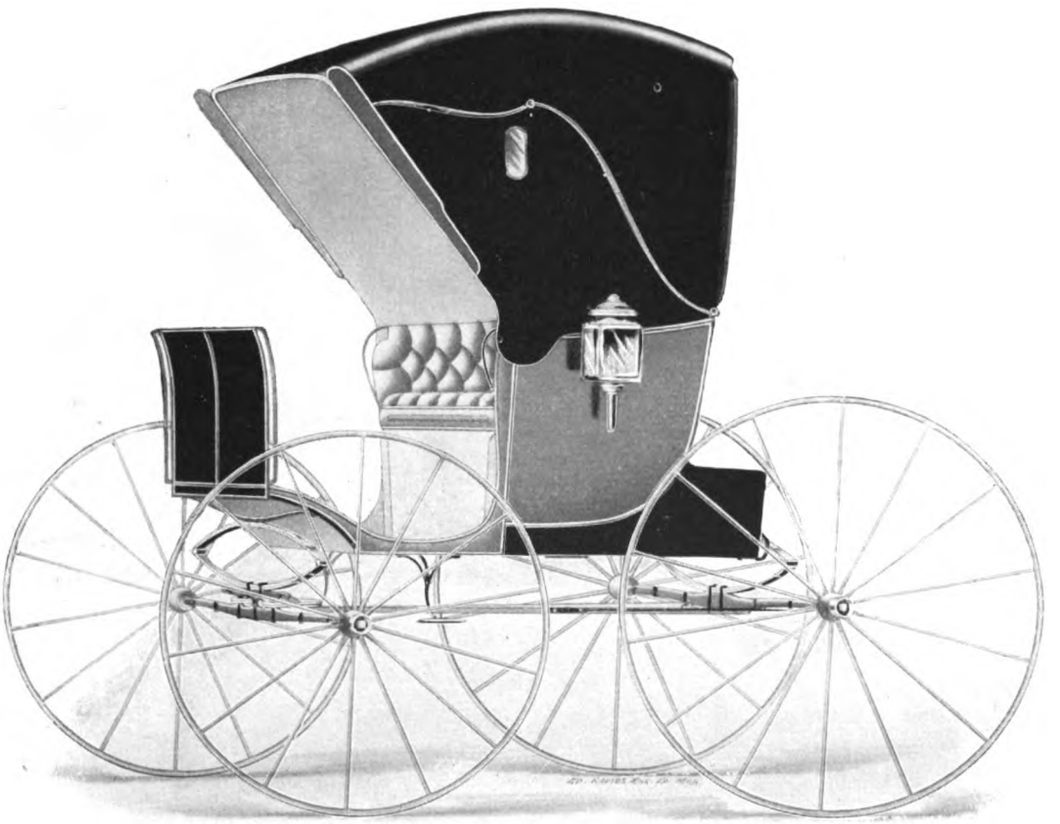


STIVER RUBBER-TIRE RUNABOUT—FULL LEATHER TOP.
Built by William N. Brockway, Inc., Homer, N. Y.

Digitized by Google

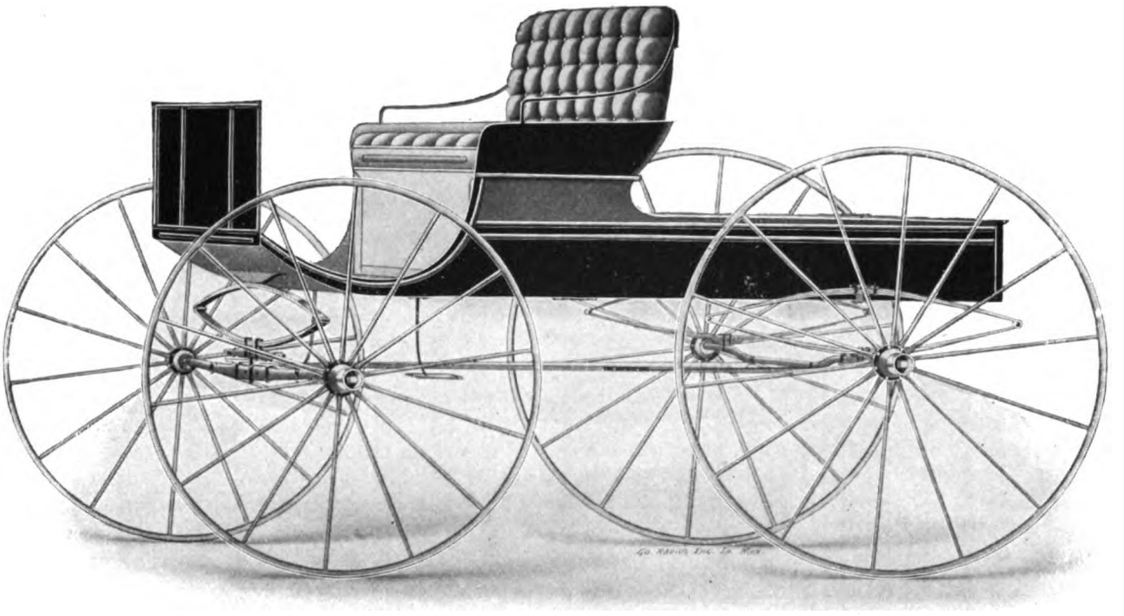


GENTLEMAN'S DRIVING WAGON.
Built by Youngstown Carriage & Wagon Co., Youngstown, O.

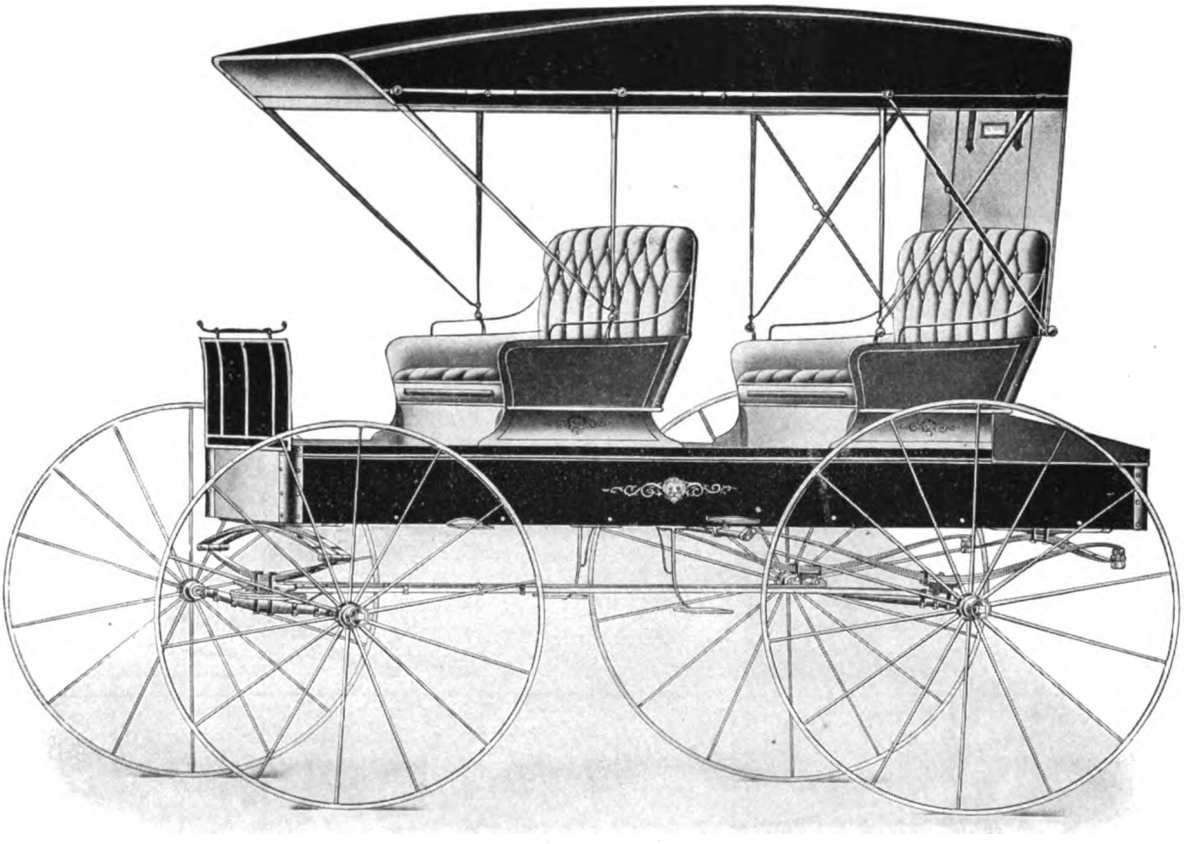


DOCTOR'S STANHOPE.
Built by Waterloo Wagon Co., Waterloo, N. Y.

Digitized by Google

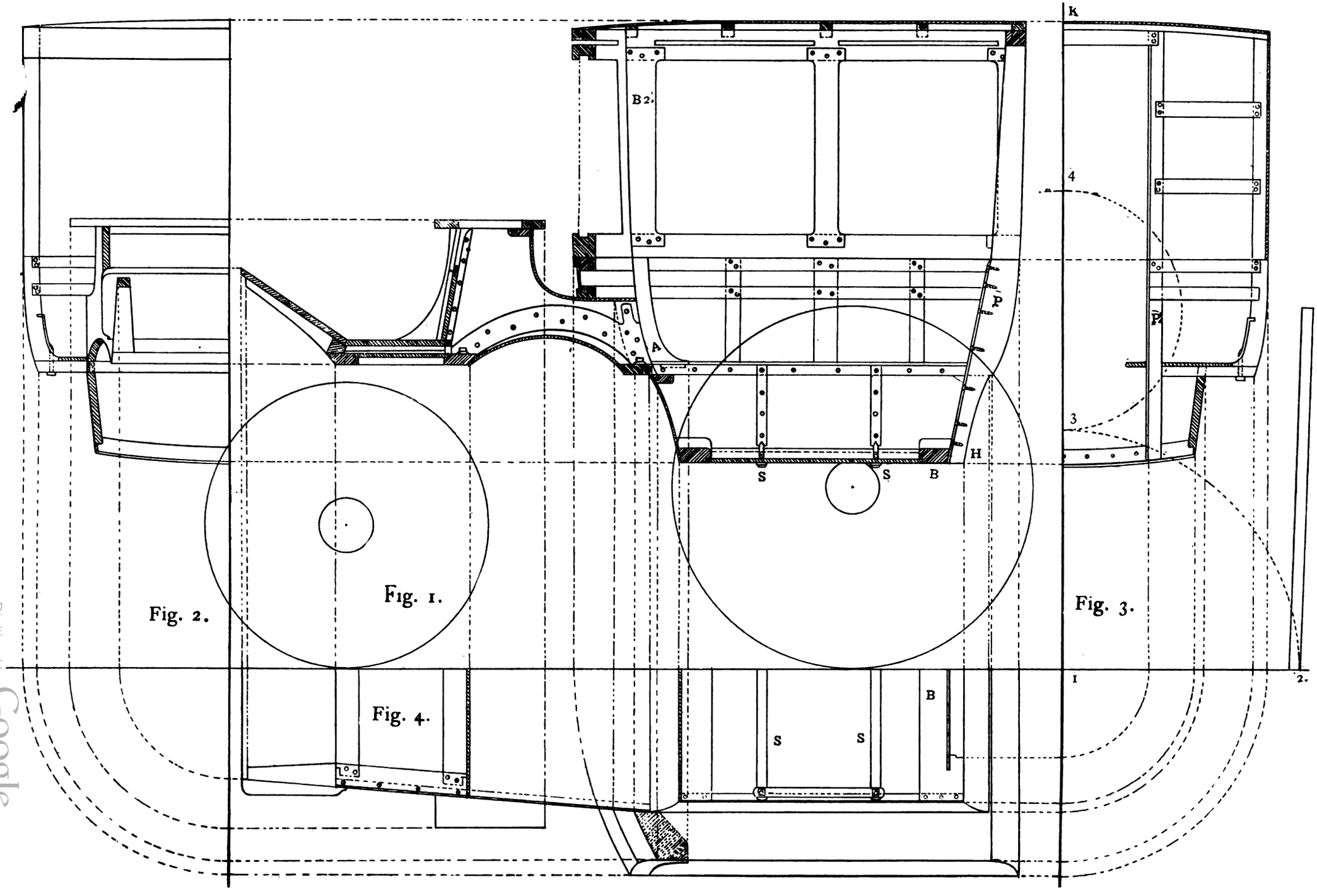


THREE-SPRING LIGHT SURREY WAGON.
Built by Staver Carriage Co., Chicago, Ill.



HALF-PLATFORM SPRING WAGON—EXTENSION TOP.
Built by Lion Buggy Co., Cincinnati, Ohio.

Digitized by Google



WORKING DRAWING OF A LIGHT 'BUS BODY.

Described on opposite page.

Digitized by Google

Wood-working and Smithing

BUILDING A LIGHT 'BUS BODY.

Drawing on opposite page.

In the working draft herewith it is shown how to construct a light 'bus body, which can either be made to have the head removable, with suitable provisional fittings, or it can be a permanent structure.

On the draft being finished, the first thing for the body maker to do is to get out his patterns for the corner pillars, and the standing pillar pattern for the door. These should be got out very accurately to the drawing. The boot or shape can be marked off the drawing on to the board the solid side is cut out of. The only patterns required for this are the bottom arch, top arch and front curve. Then the shape can be taken off the drawing by measurement, from square lines; from the bottomside line, from point to point, and the curves marked off from these measurements. Some men, however, make a full skeleton pattern of the boot, and cut the side out in this way. But a workman who understands the method of taking a boot off a drawing by measurement is a much defter workman, and shows more resource than those who proceed with the full skeleton pattern process.

The next thing is to make a half plan drawing of the body and mark off the various widths, as shown in the back and front sections, as set forth in Fig. 2 and Fig. 3, and projected to the half plan in Fig. 4. The position of the front pillar and the contraction of the boot should be clearly defined here; from the boot's contraction line the bevel for dressing up the boot pillar, and the sweep line of the circular front, and also for dressing up the bracket and front edge of the boot side. The line B2 A shows the outside line of the head and pillar.

The standing pillar, P, is got out to pattern, as shown in the elevation, Fig. 1, and dressed up square, but the shutting pillar is bevelled the edge way to the angle of the shutting track of the door, so that when the pillar is framed in it stands at an angle on the face side. Some men, indeed a lot of body makers, bevel the face side to the shut line, but this cannot be done with any directness, because it is impossible to bevel a curved pillar to a straight line without taking more off one part than another, and so altering the thickness, while if the thickness or the curve line is bevelled, the pillar will stand at full strength and square to the shutting track.

The hind bottom cross bar, B, is also an important piece of framing to get out correctly. This bar should be dressed on the wide way of the timber, to the angle of the pillar P, at the bottom point H. Then, when it is half check framed to the rocker, it will lie correctly to the angle of the standing and shutting pillars in a straight line. Getting out this bar is a similar method to dressing up the shutting pillar.

The boot bottomside is half checked to the side and fixed with screws up from below, as shown in the plan. An outside flange is left on the outside of the boot side, so that no outside joint may be seen.

The circular front pieces are obtained from the timber benders; the body rails are in two pieces and panelled, while the head pieces are solid and boxed for the glasses. The drawing shows the head to be removable, but if the head were built solidly the bottom circular piece would not of course be necessary.

The sides are framed and panelled; the corner pillars are stump tenon framed to the bottom side, and shoulder screwed from underneath; in addition to this, the pillars are strap-bolt framed, as shown in Fig. 2. This method makes an excellent job.

The head is framed in the line of the lights; the back and bottom quarters are also framed, and the whole panelled; the head panelling it mitre jointed, where the joint is at the corner, while the body proper is gigger grooved and panelled, to show the mouldings up.

The roof slats are got out 1½ in. by ⅜ in., the roof boarding being of ⅜ in. pine, or prepared roof panelling can be used, which is a veneered three-plied boarding, prepared wide enough to cover the whole roof of 'bus and brougham heads without jointing, which is a good point, but should the damp penetrate the layers of veneering it affects the glue, by which the plies are held together, and thus causes them to rise and buckle, which in a roof covering would be beyond reparation, hence the good old method of jointing a roof with thoroughly dry pine boarding, and blocked on the inside and properly covered with leather or glued on covering, is, when all is considered, the safest and best roofing.

The front bottom cross bar must of course be got out to the bevel of the arch in the same way as the hind one is at B. The rocker is fixed to the edge of the bottomside and strengthened with strap bolt plates, which bolt and screw up through the eyes of cross plates S S S S. The top of the strap bolts are lip forged, so as to be let in and get a grip of the top of the rocker, and thus take the stress off the screws in pulling the bolt home on the bottom cross plates.

The body plate is forged to take the arch of the boot broadly, while a spur lip is made to take the boot pillar towards its top, a cross foot taking the cross bar. The front of the plate is forged with a tail foot, which takes the beds of the top carriage, while the cross foot takes the arch bar. The front edge of boot is edge plated, and continued along the bottomside and up the foot board.

The boxings for the boots arch panels, and the bars necessary for their fixing, are all shown in the drawing, which to a practical man is very plain and graspable.

The door plate of the body is made flat, and goes up the inside of the standing and shutting pillars, and along the edge of the hind cross bar. A door plate forged in this way offers its depth to the direction of the weight, instead of transversely if it should be made to go on the top of the bar, in which case the thickness of the plate is in resistance. This old and obsolete plan only gives a thickness of ½ in. by the plates width, which yields easily to a heavy weight, while a plate placed edgeways up gives a depth of 2 in. by 7-16 in. thick. Thus the weight is resisted by 2 in. of plating edgeways against ½ in. the flat way, fixed to the top of the bar. In the hanging of this carriage it is absolutely necessary to provide a broad base or track as a steadiment to the leverage of the height of the body from the ground in the hanging. The track of the wheels on the road are 5 ft., behind which is developed on the center of the back half center, Fig. 3, by the arcs 1, 2, 3, 4, but it will be seen that the height of the carriage is twenty-one inches more than the width of the track, while the centers of the wheels longitudinally are as a side base about equal to the width of the track. The base from each point is a square. Now this feature, which is unavoidable in the hanging of this carriage, centers the weight too equally, and allows the top leverage of the body to act on the base without any compensating check. The bases of all four-wheeled vehicles should be rectangular, which gives greater balance to the load, and holds in check the effect of an extraneous top leverage to the base A rectangular base enhances the draught in steadiment of body and in firm tracking to the road.

The defect of four-in-hand drags as roadsters is principally exposed in their draught, as a result of unequal distribution of

Digitized by Google

the weight upon the wheel base, and the top leverage acting against the base, the result of which is that they frequently turn over, to the loss of life and limb.

When these catastrophes happen, they can be charged with safety, in nine cases out of ten, to bad coach making, through the weight being eccentric to the base, by which the center of gravity is altered on a speed being set up, and oscillation brought to bear upon the track base.

Street 'buses plying for hire are frequently overturned through bad construction. The distribution of the weight should be so as to produce a protective base in the hanging against these contingencies.

It is therefore an important thing to be kept in view, in the hanging of a 'bus, whether it is light or heavy, and particularly in those carrying a roof weight, that the base be sufficiently protective in its span in both directions to cover the liabilities herein spoken of.

The light 'bus, which is the subject of this article, will run splendidly as a wagonette, should the body be made with a movable head, but with the head as a fixture, the hanging must be studied to work out in practice the safety and good running draught of the carriage under such constructional conditions as have been dealt with.

Fig. 1 shows the inside elevation of body in construction. Fig. 2 shows the half front. Fig. 3 shows the half back, while Fig. 4 shows the half plan. With these practical guides any body maker will be able to build the body and plate it up through the smith without difficulty, because they show all the points and measurements of construction to a thorough completion.

EXAMINATION FOR WEAR AND TEAR—NEAR AND OFF-SIDE SPRINGS.

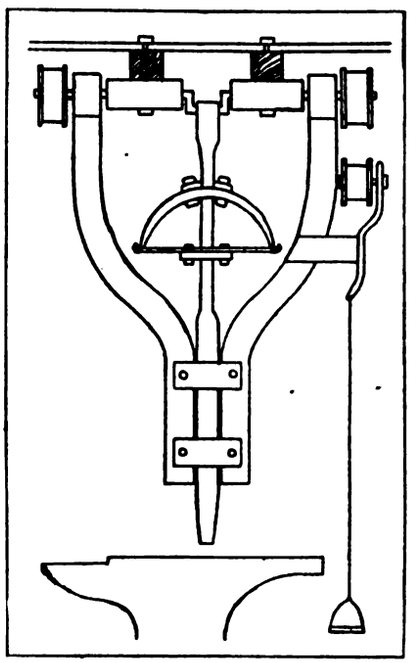
It may be that the carriage builder sometimes has to inspect a vehicle for signs of wear and tear. The following brief summary of the points to be noted when examining a motor body should prove useful, as being those parts of the exterior finish most likely to show signs of usage, and it is also an indication where durability is most required: Examine the step rubber matting and the state of the linoleum or other covering material used in the slot of the clutch and brake pedals. The driving seat and squab, especially the chauffeur's seat, will indicate to a large extent how much the vehicle has been used, as this seat is always occupied. The front and inside heelboard will show on the bottom edges a series of indentations caused by the kicking of the heels of the passengers. Mud stains will be under the wings and footboards, and the mechanism of the glass shield will indicate how often its position has been shifted. In a landaulette we shall expect to find the creases in the head more or less marked, and a light trimming will inevitably show stains in various parts. The workings of the lights in their runs will also be betrayed. The foregoing list was before the writer, who was called upon to express an opinion as to whether a certain body had been used extensively or otherwise. He found the stains on the trimming and the back seat and squab much worn, but the body was newly varnished, and the undersurface of the floor boards newly painted, which was certainly a curious state of affairs, making it more difficult to form a definite opinion, seeing that the body had been partly renovated in certain particulars.

A correspondent, in writing to a motor contemporary, points out that an American motor car firm, when mounting their cars, make the off-side springs a trifle stiffer than those on the near side, as the off-side carries the heavier proportion of the tools, extra tires, and other accessories. It is the side which also carries the weight of the driver when the vehicle travels without other passengers. This is an interesting item in the construction, and, no doubt, it should ensure a proper balance of the car if the proper allowance has been carefully calculated. With public service vehicles it has been the practice, when building the undercarriage of the horsed garden-seat omnibus of our London streets, to specify an extra spring plate not on the off side, but on the near side, so as to better withstand the strain imposed on the vehicle when it draws up into the gutter, and has to negotiate the more or less steep camber of the roadway. —A. & C. B. Journal (London).

HOW TO MAKE A LIGHT FORGING HAMMER.

The accompanying illustration shows the construction of a simple, durable and light forging hammer. This hammer takes up no extra room in the shop, as it may be hung over any anvil and can be swung up out of the way when not in use.

The hammer consists of two hangers or bearings of wood babbitted for a 1⅝ in. crankshaft. These hangers should be 8 in. long, 4 in. wide and 4 in. thick, with two ⅝ in. bolts in each piece to hold them to the timbers overhead. The crankshaft is made of 1⅝ in. cold rolled steel. If this crank is made with a core no lathe work will be required on it. On one end



The Hammer Swings Above the Anvil

of this shaft is a 12 in. flywheel and on the other end a 10 in. driving pulley. Both of these should be fitted with a key, as there is considerable strain on this shaft.

The two side pieces are of 3 in. channel iron with the flat on the inside to form, at the lower part, the guides for the ram head. Two pieces on each side, ½ by 2 in., hold the frame in place and form guides for the ram. Bearings on the upper ends of the channel irons can be made of wood or iron and babbitted, says American Blacksmith. The channel pieces can be made of any length to suit the height of the room in which the hammer is located. Two ¾ in. rods with turn buckles are used to hold the frame in position over the anvil. Make the connecting rod in two pieces with ⅝ in. bolts each side of crank. The ram head is of iron 2 by 3 in. with a steel face drawn small at upper end and bolted to spring, which can be made of an old carriage spring with strap to connect at lower end. This hammer is run with a loose belt and tightener which can be worked by foot or hand. There are no obstructions in working this hammer from any side and the stroke should be 4 in. with a speed of about 250 revolutions per minute.

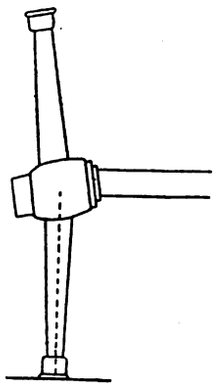
Change of Name.—The Homer Auto Truck Co., of Homer, has changed its name to the Homer Gas Engine Co., with $25,000 capital stock.

Digitized by Google

SHORT TALK ON AXLE SETTING.

To set an axle properly it is necessary to know something about the principle of axle setting. It is necessary to know the meaning of pitch and gather and how to produce both properly and in the right degree.

It is generally agreed by vehicle builders, that a wheel must stand on a plumb spoke to run properly. And by plumb spoke is not meant a spoke at right angles with the ground and its front or rear face. By plumb spoke is meant a spoke that is plumb through its center line. That is, if it were possible to drop a line through the center of the spoke, that line would be plumb. When you realize that all spokes are tapered you will readily see that the plumb line is the only true way of figuring the plumb spoke. Now, as the wheel is made with all spokes radiating from the hub at the same angle, and as all are supposed to be dished to the same degree, says the Horseshoers' Journal, it must be up to the axle to place the center of the



bottom spoke in a plumb line and not at an angle. To place every spoke in the same position when it is the bottom spoke in the wheel, is the problem.

To do it the top of the wheel must be made to lean out as in the illustration. To make the top of the wheel lean out the angle is given pitch; that is, the end of the axle is bent down. The amount of pitch required to make the wheel travel on a plumb spoke depends upon the dish of the wheel.

To prevent the wheel from running out against the nut the axle must also be given gather. That is, the wheel should stand in slightly on its front side. To get this result the end of the axle is bent slightly forward. This causes the wheel to run against the collar, as it should do. Care must be exercised, however, so as not to give the axle too much pitch or gather. If too much is given the axle will wear unevenly and produce unnecessary friction, and as a result the wagon or vehicle will draw hard.

ANOTHER EXTENSION ON BILL OF LADING.

The eastern lines in the Official Classification territory have extended until July 31 the time that shippers may continue using their ordinary shipping receipts or dray tickets when stamped with a rubber stamp subject to conditions of the uniform bill of lading.

LARGE PLANT FOR CAMBRIDGE, MASS.

A large tract of land containing 31,000 square feet in Cambridge, Mass., fronting on Amherst street, opposite the south end of the recently built World's Fair Building, has been bought by W. L. Nichols, of the firm of D. P. Nichols & Co., of Boston, New York and Washington, carriage and automobile manufacturers, and the Frayer-Miller motor truck. They plan to increase their manufacturing facilities at once, and will build a large factory of re-enforced concrete construction.

FOREIGN AND DOMESTIC GLUES IN WOODWORKING.

Prejudice and Glue Quality, Wood Joints and Their Security, Strength and the Viscosity of Glues.

Glue is ever a fruitful subject for discussion. Extended application of foreign glues to joinery work has stimulated discussion as to the relative merits of the imported and domestic products for this purpose. The very fact that in piano manufacture—an industry involving the use of none but the highest grade materials—consumers are about evenly divided as to the use of the one type or the other has led dealers in domestic glues to the erroneous conclusion that a preference for the imported is founded upon nothing more substantial than blind prejudice bred of long usage, says R. Livingston Fernbach in Wood Craft. There is no question but that when a man has used one kind of glue year after year and has become wedded to it, so to speak, it is about as easy to move the rock of Gibraltar as to induce him to change his glue. Disregarding this axiomatic consideration, however, impartial investigation tends to reveal certain advantages possessed by foreign glues, at least where the making of wood joints is concerned.

Strength and Viscosity.

Contrary to the general belief, the strength of a glue for woodworking is a secondary and not a primary consideration. The primary consideration is its viscosity, or the rate of flow of the solution when made up in certain proportions. Have you ever observed that a foreign glue, with but a comparatively weak jelly as compared with some other glues, will make a stronger wood joint than these stronger glues? There is a definite reason for this, to wit, the low viscosity of the foreign glue.

The first essential of a woodworking glue is that it shall properly penetrate the wood. Upon this the very life of the joint must depend. No matter what the inherent strength of a glue, if its solution lies at the surface of the wood and dries there the joint will have little strength.

Viscosity then, rather than jelly strength, is the important factor to be considered in this class of work. True, the actual strength of the glue is a factor. It must be borne in mind, however, that of two glues of equal strength that which exhibits the lower viscosity will make the stronger joint.

The very fact that foreign glues in the course of manufacture undergo processes of clarification, whereas domestic glues as a rule do not, results in a lower viscosity in the foreign product than in the domestic. In consequence, the solution of the foreign glue penetrates deeper than that of the domestic of equal strength, and hence makes a stronger joint. Here we have the whole story as to why some consumers favor foreign glues for woodwork.

Preferences of Piano Makers.

Now, the above cited fact that some piano makers will use none but domestic glues commands some attention. Are they more ignorant than their competitors who incline to foreign glues? Are they more blindly prejudiced? Not at all. The fact of the matter is that they are more enlightened. This may seem a direct contradiction of what I have just said in regard to foreign glues. Let us see.

For the price of a foreign glue, of a given strength, one can as a rule purchase a domestic glue of much greater strength. Let us assume a practical example. Suppose that a foreign glue of 1⅜ strength costs 15 cents per pound. For this money a domestic glue of 1X strength can be bought. Applied in solutions of equal concentration, the domestic glue, despite its greater strength, would make the weaker joint; for the reason that, its viscosity being higher than that of the foreign, more glue would lie at the surfaces of the joint and dry there.

The astute reader may ask, could not one reduce the strength of the domestic glue from 1X to 1⅜ by adding water and at the

Digitized by Google

same time reduce the viscosity of its solution? Right. This is the very answer to the question as to why those who use domestic glues for joints are more enlightened than the users of foreign glues, despite the latter's seeming advantage. He who follows the practice of reducing the strength and at the same time the viscosity of the domestic glues gets a good joint and incidentally cuts down his glue bills.

There is one source of danger in this practice. If the high viscosity of the domestic glue results from natural causes, well and good. But beware the glue that has been thickened with alum or owes its high viscosity to the presence of lime soaps from over-liming the stock, or to the presence of mucin from faulty washing of the stock. To dilute glues of this class is to sacrifice glue substance while reducing the viscosity. Your domestic glue must be pure.

This leads us again to the foreign glues. The rule that, because of their low viscosities, they make a better joint than domestic glues of greater strength and higher viscosities holds true only on the assumption that the foreign glues are pure. They are often far from it.

Impurities of Glues.

An examination of the ash of a glue serves to reveal impurities. The ash of a foreign glue is prone to contain abnormal salts, and these in abnormal proportions. A trace of the metal chromium, for example, will slowly but surely rot and weaken the glue joint. The ashes of domestic glues, on the other hand, are as a rule remarkably pure. The only possible objection to domestic glues for woodworking is their high viscosity. We have shown how this may be overcome to the advantage of the consumer's pocket. Over-limed domestic glues are not frequently met with: Over-limed foreign glues are a common occurrence.

There are two or three types of foreign glues that stand in a class apart. We can not duplicate them in this country, not because we lack the skill, but because of high labor precluding certain refining processes without making the price of the finished product way beyond the market.

I believe I may pertinently remind the reader that in this as well as in other applications of glue intelligent testing of the product so far from proving a burden to the consumer must eventually benefit him financially. Apply certain tests to glues intended for woodworking and you will be able to select wisely and profitably. Trust to appearance alone and your way will not lie along pleasant paths.

CINCINNATI CARRIAGE MAKERS' CLUB.

The dinner of the Carriage Makers' Club was held at Chester Park, Cincinnati, on May 13th, with an attendance of 73 members and three guests. The weather was pleasant and the outdoor feature seemed to be the right thing.

The following new members were elected: Elisha Morgan, salesman, Chicago Varnish Co., Chicago, Ill.; Horace E. Payson, prop., Payson Varnish Co., New York, N. Y.; E. E. Titus, vice-president, Cincinnati, O.

The letter of resignation of Stanley Smith was read and on motion a committee consisting of C. W. Steele, Otto Armleder and R. D. Nibert was appointed to wait on Mr. Smith and learn whether he could not be induced to remain a member of the club or transfer his membership to some one of his firm. The membership of A. P. Lounsbery was transferred to Chas. C. Wedel of the same company.

Mr. Armleder, chairman of the labor committee, reported on the matter of cost system as follows: "At the meeting called for the purpose of discussing the proposition of the club standing the expense of a cost system, a resolution was offered to the effect that it was not within the province of the club to spend this money for such a purpose, inasmuch as only the manufacturers would receive a direct benefit. He stated, however, the matter had been taken up with the individual manufacturers and that some progress was being made toward having a uniform system installed in the factories."

CHICAGO FOR HEADQUARTERS.

W. A. Merrifield Chosen Secretary of C. M. A. A., with Headquarters in That City.

The Carriage Manufacturers' Association of America has decided to establish headquarters in Chicago in charge of a secretary who will devote all of his time to the affairs of the organization. For the position of secretary the executive committee, which held a meeting in Chicago May 18, has chosen W. A. Merrifield, for many years connected with the Stover Manufacturing Company, of Freeport, Ill., and from 1904 to 1908 with the Challenge Company, of Batavia.

The offices of the association will be located in the American Trust building, Clark and Monroe streets, where are also housed the National Association of Agricultural Implement and Vehicle Manufacturers, the National Plow Association, the National Wagon Manufacturers' Association and the National Association of Grain Drill Manufacturers.

Since the organization of the Carriage Manufacturers' Association of America, E. V. Overman, of Cincinnati, has served as secretary. Last fall the association decided to employ one who could devote his entire time to the work of the secretary's office as soon as the financial condition of the organization would permit.

The new secretary's first step will be to visit the plants of all of the members of the association and familiarize himself with the conditions in the vehicle trade.

The other officers of the association are as follows: President, C. C. Hull, Connersville, Ind.; first vice-president, H. M. Foulk, Oshkosh, Wis.; second vice-president, S. G. Gay, Ottawa, Ill.; third vice-president, Robert Brodie, Owensboro, Ky.; treasurer, G. A. Matthews, Jackson, Mich.

HAS CHARGE OF AUTO DEPARTMENT.

F. L. Cowles, formerly of C. Cowles Company, New Haven, Conn., well known to the carriage and auto trade, and late executive secretary and treasurer of the National Association of Carriage Hardware Manufacturers, is now in charge of the auto department of the Novelty Manufacturing Co., of Waterbury, Conn. This company is about to issue a catalogue of automobile hardware and accessories.

NEW MOTOR PLANT FOR MINNEAPOLIS.

The Minneapolis Motor & Truck Company has been formed to manufacture motors, trucks and articles and appliances for automobiles. The capital is $500,000 and the liabilities limit $100,000. M. A. Gerber is president and treasurer, W. B. Murray, vice-president and Frank Healey, secretary. The company has been experimenting with a design for an automobile and the machine has appeared on the streets.

THE KEYSTONE VEHICLE COMPANY.

The Keystone Vehicle Co. is the name of the company which succeeds the Keystone Wagon Works, of Reading, Pa.

The new company announces that on April 5 it purchased the manufacturing plant of the Keystone Wagon Works, including ground, buildings, machinery, stock and orders owned by its predecessors.

The company also states that it starts out entirely free from any current indebtedness, with the exception of an old mortgage upon the manufactory, which it is deemed impolitic to pay off at the present time. None of its predecessors' liabilities will be assumed by the new company beyond the mortgage above referred to. The same management and force of employees will be retained. The company is capitalized at $75,000.

The Ionia Wagon Co., of Ionia, has increased its capital stock from $250,000 to $400,000.

Digitized by Google

PAINTING AND UPHOLSTERING

PAINTING A SURFACE CANARY YELLOW.

A New York color grinder says canary yellow is one of the best selling colors on the market. It is at the same time quite a difficult color to handle and produce effective surface results. While a beautiful color possessed naturally of many attractions, it is also a delicate color, easily "mussed up," disfigured with finger marks, and its color tone and lustre impaired.

Canary yellow, first of all, should have a good, clean and substantial ground, one "built upon honor," in fact. All the preparatory processes, such as puttying, glazing, sandpapering and the like, should be carefully and skillfully attended to. Indeed, the surface should be brought up with as much care and precision as is given surfaces coated up with any of the glazing pigments. And all these coats should be pure white, or rather they should start with pure white, and having enough surfacing coats on to establish the white solid and clean, the yellow blend should progress until the canary yellow in its true color is developed. Having reached a solid white, the next two coats, which are strictly in the nature of surfacing coats, may with advantage have enough of the canary yellow added to the white to cast them strongly toward the pure yellow. The proper smoothness of surface having been secured and the ground color worked strongly in the direction, as to color, of the yellow, the next step is to apply a coat of flat color, following in due time with a coat of varnish color, to mix which add six ounces of yellow to five times that amount, by weight, of varnish. Break the yellow up first in turpentine, and then add the varnish, stirring the contents thoroughly. Apply one coat of this varnish color, and then reduce the amount of color in the varnish by one-half. Work this varnish color on freely. When dry knock off the gloss by rubbing lightly with a roll of soft broadcloth, wet, and dipped in No. 00 pulverized pumice stone. Next coat, use one ounce of color in one pint of varnish (rubbing varnish to be used in all three coats), which is just sufficient to preserve the purity of the yellow. In due time rub briskly on this coat, stripe and finish with a pale elastic finishing varnish. By the above process ample protection is given the yellow, both beneath and above, and other things being equal it should give a good account of itself.

STRIPING PENCILS—THEIR MAKING, USING AND CARE DISCUSSED.

To make the sword or dagger pencil, whichever you may choose to call it, take a swan quill camel's hair pencil of superior quality, and, removing the hair, draw to the desired bevel from one side of the flat portion of the hair. Then holding the stock of hair in the left hand, with the thumb and forefinger of the right hand mellow a little trimmer's paste into the heel of the stock, or that end which is inserted into the handle. Make the handle of cedar or white pine, and in the center of the end of the wood, split the timber and insert the "butt" end of the hair as above prepared. Then with strong linen thread wind that portion of the handle containing the hair, after which, to make all secure, glaze over the thread with a little orange shellac. In making the sword or dagger pencil it is best to make up a lot of at least half a dozen, as in the beginning of your pencil making you may count yourself lucky if you get one really good pencil out of the lot. However, a little experience will enable almost any deft handed workman to soon acquire plenty of pencil making proficiency. It is a good plan, moreover, to make different sizes of pencils; that is, pencils with varying quantities of stock in their bodies. Thus beginning with the pencil carrying a little stock, and drawing a hair line, gradually increase the quantity of hair until you have a pencil that will cast a round line, or a handy line, or even a narrow stripe. To do this, a half dozen sizes will be necessary.

Before using the newly made pencil grease the hair, drawing it all out gently and evenly, and lay the tool away upon a clean piece of glass out of reach of dust and dirt. Do not allow paint to dry into the hair. Especially wash the "butt" of the stock out clean, and then roll swiftly between the palms of the hands to dry out the stock, after which press plenty of mutton tallow into the heel. This preserves the natural elasticity of the pencil and prolongs its life. Pencils should never be stuck up against the shop window glass nor in any position exposed to the accumulating dust.

A good pencil is a valuable asset, and it should be handled and cared for accordingly. In washing the pencil out in turpentine, do not press the hair hard between the fingers; neither twist nor crinkle it. Simply flood the accumulations, dry out as above described and grease carefully.

SEASON'S PROBLEMS AND SUGGESTIONS FOR SOLUTION.

June days, with their unfolding beauty, are days which invoke eternal vigilance on the part of the painter. Summer days are fraught with uncertainties of many and divers kinds. The most formidable ones comes from, or are found in, the varnish room, where the use of the most indispensible and the most delicate material reckoned into the upbuilding of the paint and varnish structure is a daily part of shop duties.

There are hot, moist days in June and in later summer when varnish, in the face of most exceptional care and expert treatment, "flares" up in the very fashion of old human nature itself, and goes wrong in perhaps a variety of ways. Chiefly on such days as above noted the silking and enameling of varnish occurs. Varnish room workers, despite the glee of the scientific gentlemen who scorn to acknowledge the possibility of an over supply of moisture in the paint shop, know very well that a little dry, warm air to react upon the excessive moisture will restore normal atmospheric conditions and enable them to surmount the difficulties. Pithing is another summer-time "deviltry," and comes principally from a varying room temperature or untoward conditions generally. When the air of the room changes from hot to cold, or to a degree approaching the latter, or from dry to moist, pitting or pin-holing, two forms of the same trouble, differing only in degree, are due to ensue. Varnish not sufficiently ripe or matured will, and very often does, pit, as does also a varnish heavily charged with gaseous impurities. The deadening and sinking in of varnish while not a strictly summer difficulty, is more likely to be met with at this season than at other times. It is caused by unseasoned undercoats, or unseasoned wood, either of which conditions enforce a chemical change in the physical structure of the paint and varnish, causing the varnish to lose its lustre. Sweating, for reasons stated in reference to deadening, is a likely warm weather proposition. Rubbing coats of varnish during hot or humid days do not dry as rapidly as at other times, and the result often is that three coats are rubbed not infrequently before they are thoroughly dry, in which case they invariably prove the undoing of the varnish applied over them. At most seasons, and particularly at this season, a rubbed surface of varnish, if permitted to lay over night in a close paint shop exposed to the fetid fumes and reeking poisons saturating the atmosphere, will accumulate upon its surface a greasy, slippery scum. Varnish over such a sur-

Digitized by Google

face and the outcome is warranted to be a severe case of sweating, to cure which it will be necessary to either remove the freshly laid on coat of varnish with a saturation of ammonia or permit it to harden sufficiently to later on resurface and revarnish. Not alone in the case of varnishes does the painter encounter at this season troubles unexpected, and, as the country correspondent might say, too numerous to mention." Colors hitherto reliable fail to dry in the stipulated time or fail to dry uniformly. Paints, too, remain "tacky" long after they should be dry from top to bottom. All these things, in combination with others scarcely less troublesome, troop into the paint shop during summer days with a frequency which should put the painter upon his mettle in an effort to prevent them. Care, caution and vigilance need to be, and should be, exercised in this matter.

COACH JAPAN—SOME ESSENTIAL PROPERTIES.

The color of coach japan—that is to say, good coach japan—should be a happy medium between extra light and very dark. It should, and, if of proper quality, will, mix with raw linseed oil without curdling. Floated over a hard and perfectly non-porous surface, such as metal or glass, it should dry in five hours to a perfectly firm film, without brittleness. Into a bottle confine a quantity of oil and japan in the proportion of five parts oil to one part coach japan, and shake thoroughly, then setting aside for a space of twenty-four hours. If the japan mixes perfectly with the oil, holding well in solution, it is safe to pronounce it a good article. If the conditions are reversed, then look with suspicion upon the japan. Coach japan is likewise valuable to the painter in proportion as it discolors or fails to discolor the light and delicate pigments which he largely uses at the present time.

Japan is a medium easily forced to make or unmake, the necessary qualities in carriage and wagon pigments. An excess of care cannot well be exercised, therefore, in its purchase.

MIXING COLORS—ESSENTIAL FEATURES CONSIDERED.

More than the average painter suspects the mixing of colors adds or detracts from both the durability and the brilliancy of the pigments. The operation of beating up a cup of color looks simple, and to a certain extent it may be called such. Technically, however, it is a very nice and an exceedingly important bit of work. To break up a color with turpentine, add the fluid gradually, a small quantity at a time, stirring meanwhile evenly and steadily until the whole mass is liquified and worked out to a smooth and uniformly easy flowing medium, perfectly free from lumps or other surface disturbing factors.

Do not use varnish as a binder in colors. Varnish unites with the japan—japan ground colors being under consideration—and forms a hard, impervious surface repellent to the varnish. Pure raw linseed oil is much better. It is a natural binder, and holds the color from chipping or scaling. Besides, it keeps the color in prime condition during the finishing, which is important.

Colors cannot well be mixed too much, a point that needs to be emphasized. Moreover, thorough and careful mixing promotes right color effects, increases durability and insures correct surface results.

STRIPING PIGMENTS AND THEIR PREPARATION.

It is both economy and in line with excellent results to buy striping colors ready prepared in collapsible tubes. Such colors are invariably smoother working and more uniform in quality, and of superior lustre and tone, as compared with any which the painter may prepare from the colors of ordinary kind and degree to be had from the paint shop shelves. Another advantage of the tube preserved colors is that they are always fresh and in prime condition. To meet present day exigencies practically all striping colors are furnished japan ground, which in case of some naturally "short" pigments gives them a still shorter property. To overcome this, use turpentine and elastic rubbing varnish, equal parts, in softening up the pigment for use. Oil only intensifies the trouble, apparently, however foreign to the nature of new linseed oil this may sound. White, most of the blacks and some of the lighter yellows are usually "short" working pigments. All striping colors, as a rule, work to better advantage if put into a small cup attached to the palette, stirred to a paste form, and dipped from thence with the pencil to the palette and so worked to a striping consistency in turpentine.

D. M. PARRY RETIRES.

The resignation of Mr. D. M. Parry as president of the Parry Manufacturing Company, and his withdrawal from active connection therewith, is announced.

The office of president has been filled by the election of Mr. S. C. Parry, who has been treasurer of the company for a number of years. Mr. E. R. Parry continues as vice-president. Mr. T. H. Parry continues as general superintendent, which office he has filled since the business started. Mr. Abram M. Parry, his son, a recent graduate of the C. B. N. A. technical school for draghtsmen and mechanics, has been elected a director and secretary of the company. Mr. L. D. Guffin, the former secretary, has been elected treasurer.

The affairs of the company are reported as being in excellent shape. Mr. D. M. Parry withdraws to give his full time to private interests which for some time past have largely demanded his attention.

TO ADOPT WESTERN FREIGHT CLASSIFICATION.

Theo, Luth, chairman of the committee on freight and classification, says he is informed that the official classification committee when in New York a few weeks ago recommended the adoption of the Western Classification on crating vehicles, and that it will be in effect in the next issue of the Official Classification, which will be about August 15. This has not yet been officially issued, but the information is undoubtedly correct. This will be of some value to carriage manufacturers in preparing themselves for the purchase of certain crating lumber.

FACTORIES DAMAGED BY CYCLONE.

The cyclone which passed across northern Indiana and Ohio, April 30, damaged two of the plants of the Pioneer Pole & Shaft Company, one located at Sidney, Ohio, and the other at Anderson, Ind. At Sidney the roof of the company's 60 x 160 factory building was blown off and the walls of the second story razed. Wood stock was strewn over the country for miles. A large part of the roof was carried a distance of four miles.

The damage at Anderson, Ind., was confined to the warehouse and was not heavy. The company immediately began rebuilding at both points. Fortunately its stocks at other points are ample and it is able to make prompt shipments of all orders.

M. D. Tilson, head of the Tilson Carriage Company, of Little Rock, Ark., Texarkana and Shreveport, has sold his interest in the Little Rock branch to I. L. Safferstone and J. Saffertone, of Plain Dealing, La. Mr. Tilson will concentrate his interests at the other two branches, with headquarters at Texarkana.

Digitized by Google

Timber Conservation

TESTING EUCALYPTUS FOR VEHICLE TIMBER.

Tests on eucalyptus timber are being made by the Forest Service of the Department of Agriculture, with the object of determining whether or not that timber would make a substitute for hickory.

A shipment of eucalpytus was recently made by the Forestry Service to The Pioneer Pole and Shaft Co., of Muncie, Ind., to be worked up into shafts, and the following is the report of the Muncie concern, giving a clear idea of their experience in turning the timber into vehicle shafts:

"We received, on March 3, 1909, twelve pieces of eucalyptus timber, 1¾ by 2½ inches by 9 feet long, shipped from San Jose, Cal., February 13, 1909, by the United States Department of Agriculture for the purpose of being worked into shaft, and forwarded to the Laboratory of Forest Service of Purdue University, for strength tests.

"Our report on the timber and working of it is as follows:

"Bent ten pieces into shafts, and worked two pieces in crossbars.

"The timber when received was very dry and hard, badly sun-checked, evidently cut from dry lumber and from the top of the pile. In consequence, we could not give it any drying or curing treatment.

"The timber weighed 4.72 pounds per board foot on the average. Some pieces were of lighter weight than others.

"The growth, seemingly, was very dense, but badly twisted and curly.

"Using the sharpest of knives, the timber badly roughed up in planing. In planing this stock from 1¾ in. thick by 2½ in. wide to 1⅜ in. thick by 1⅞ in. wide, tapered to pattern for shafts, i. e., eleven-sixteenths of an inch at the heel, by seven-eighths of an inch square at the point, the sun-checking seemingly worked out, but after the material was steamed and bent, checks bursted open badly.

"In steaming the stock preparatory for bending, the material showed a relationship to the oak family, staining black in color.

"Some of the pieces were steamed four hours, some were re-steamed to nine hours and as long as fourteen hours.

"We found it to bend just as successfully after the four hours as after the longer period of steaming. In bending, it shaped up very nicely at the points, but squashed badly underneath the heel. We doubt if any of these would pass muster in the trade for a well-made shaft.

"In rounding the shafts, after they were bent, they roughed up badly again, as in planing.

"By belting, or sanding and polishing, by taking considerable time, we were able to sand down these rough places to rather a smooth finish, yet it required considerably longer time and care to do this than it does with hickory, with the danger of leaving the shaft with a very uneven surface in an effort to belt down the rough places.

"As to the length of time the timber will hold its bend, of course, would have to be determined. With the exception of one pair of shafts, which we retain, they were sent to the Laboratory of Forest Service, at Purdue University. This timber coming to us in the condition it was may not be a fair sample of that timber. The fact that it was dry and badly sun-checked, of course, was against it. Possibly a test of green stock, cured carefully, would show better results, yet, if the nature of this timber is twisted and curly, as was this sample lot, and straight grained material cannot be had, we doubt the practicability of using this for shafts. Will be anxious to know of the strength test. "The Pioneer Pole & Shaft Co."

The strength tests are now in process of completion, and results will be available in a few months, demonstrating whether or no any of the great number of species of eucalyptus will be available for use as vehicle material.

The report on the steaming and bending test, made by the National Hickory Association, gives a practical man a very clear idea of what they would experience in handling the wood. The steam bending test indicates that the wood will not be suitable for vehicle parts.

ENGLAND COGNIZANT OF NEEDS OF REFORESTATION.

England, with a smaller percentage of forested area than any other civilized country, is importing enormous quantities of wood in various forms. About ninety per cent. of all the timber she uses comes from her colonies or other countries, and for it she must pay yearly some thirty million pounds. The United Kingdom, contrary to the general impression, has a great deal of waste land that could be profitably devoted to timber production and made to supply much of the demand for timber by her varied industries.

That the necessity for further developing the natural resources is now fully realized by the leading English statesmen, is strikingly evidenced in the Budget which has recently been introduced into the House of Commons. The Chancellor of the Exchequer, Mr. Lloyd George, made a speech of nearly four and one-half hours in explanation of the many items and new provisions of the Budget. According to the London Daily News this speech marked a record unparalleled since the achievement of Mr. Gladstone in the 'fifties.

In outlining the Budget's proposals for forestation and national development, the Chancellor said that it might not be the function of the government to create work, but that is is an essential part of its business to see that the people are equipped to make the best of their own country, and, if necessary, help it to do so. A State can and ought to take a larger and wider view of its investments than individuals. The resettlement of deserted and impoverished parts of its own territories might not bring to its coffers a direct return which would reimburse it fully for its expenditure, but the indirect enrichment of its resources would more than compensate for any apparent or immediate loss. Any man who had crossed and recrossed England from north to south, and from east to west, must have been perplexed at finding there was so much waste and wilderness possible in such a crowded little island.

"This brings me straight," Mr. Lloyd George continued, "to the question of afforestation. There is a very general agreement that some steps should be taken in the direction, I will not say of afforestation, but of reafforestation the waste land of this country. Here, again, we are far behind every civilized country in the world. In Germany, for instance, out of a total area of 133,000,000 acres, 34,000,000, or nearly twenty-five per cent., are wooded. In France, out of 130,000,000 acres, seventeen per cent. are wooded. In the United Kingdom, out of 77,000,000 acres, only 3,000,000, or four per cent., are under wood. The number of people directly employed in forest work in this country is only 16,000, and yet the climate and soil of this country are just as well adapted for the growth of marketable trees as those of the estates of Germany.

"Recently we have been favored with a striking report of a royal commission, which outlines a very comprehensive and far-reaching scheme for planting the wastes of this country. The systematic operation which the commission recommend is a gigantic one, and before the government can be committed to it in all its details, it will require very careful consideration by a body of experts skilled in forestry. I am informed that there is a good deal of preliminary work which ought to be undertaken before the government can safely begin planting on the large scale indicated in that report.

"I will tell the House what we propose to do: There is a certain amount of money, not very much, spent in this country, in a spasmodic kind of way, on what I may call the work of national development—in light railways, in harbors, in indirect but

Digitized by Google

very meager assistance to agriculture. I propose to gather all these grants together into one national development grant, and to put in this year an additional sum of 200,000 pounds for these purposes. Legislation will have to be introduced, and I will then explain the objects in greater detail, but the grant will be used in the promotion of schemes which have for their purpose the development of the resources of the country.

"It will include such objects as the institution of schools of forestry, the purchase and preparation of land for afforestation, the setting up of a number of experimental forests upon a large scale, expenditure upon scientific research in the interests of agriculture, experimental farms, the improvement of stock, the equipment of agencies for disseminating agricultural instruction, the encouragement and the promotion of co-operation, the improvement of rural transport so as to make markets more accessible, the facilitation of all well-considered schemes for attracting labor back to the land by small holdings or reclamation of wastes. Every acre of land brought into cultivation, every acre of cultivated land brought into a higher state of cultivation, means more labor of a healthy and productive character; it means more abundant, cheaper and better food for the people."

Other authorities estimate that there are about 20,000,000 acres of waste land in the United Kingdom, and that at least half of this area, or 10,000,000 acres, is suitable for tree growth and will produce timber if planted. A yearly appropriation for forestation and national development along the lines indicated in the Chancellor's speech would ultimately result in immense benefit to the country, and make it far less dependent than at present upon foreign sources of timber supply, which, in many cases, are decreasing.

TO TRY GROWING OF EASTERN HARDWOODS IN CALIFORNIA.

The Pacific Coast will soon be the scene of an interesting tree growing experiment. The United States Forest Service is planning to introduce a number of the more important eastern hardwoods into California, and will this year experiment with chestnut, hickory, basswood, red oak and yellow poplar or tulip trees. Small patches of these trees will be planted near the forest rangers' cabins on the national forests, and if those do well larger plantations on a commercial scale will soon be established on wider areas.

There are over one hundred and twenty-five different species of trees in California, a number of which produce some of the most valuable varieties of lumber in the country. Although considerably over one-half of the species are hardwood or broad-leaved trees, yet, with the exception of the exotic eucalyptus, there is not a single species of hardwood here ranking in commercial importance with the leading eastern hardwoods. Climatic conditions in many parts of California are undoubtedly favorable for the growth of a number of the valuable hardwoods, and the absence of these trees is due mostly to unfavorable factors of seed distribution.

If the experiments are successful, a valuable asset will have been added to the forest resources of this State, which should prove of special benefit to the local furniture and vehicle industries. Chestnut and red oak are highly esteemed for furniture, while with hickory, basswood and eucalyptus at its command, California should lead all other States in the vehicle industry.

MAY LOSE RECEIVER.

Business has been so good lately that it is now stated on good authority that the complete reorganization of the Electric Vehicle Company, of Hartford, Conn., will soon take place. Nearly all of the claims have been settled and the controlling interests will be able to start with a clean slate.

CARRIAGE TRADE OF SCOTLAND.

Leading Builders Now Buy Chassis and Manufacture Motor Cars.

There is one marked difference between the carriage trade in Scotland and in the United States. In Sotland there are no repositories, or firms dealing in various makes of vehicles; each carriage concern sells only vehicles which it manufactures, writes Consul Rufus Fleming, of Edinburgh.

Carriage building is one of the oldest crafts in Edinburgh, and has long had a place in the highest rank of mechanical labor. This is evidenced by the fact that in it there are no less than six distinct six-year apprenticeships to be served therein, viz., body makers, under carriage makers, wheelers, smiths, trimmers and painters. Each of these branches is a separate department. Coach makers are, as a rule, their own architects, and give much care to the designing of bodies. The framework of the bodies is of home-grown ash, the other woods principally used being mahogany, walnut, lancewood, birch, oak, and American pine. For some years the wheels have been nearly all imported from the United States. The springs and axles are brought from England, but all the rest of the iron and steel used in the construction of first-class carriages is hand-forged on the premises. A Scotch-made carriage is heavier than the American vehicle of the same general pattern and is comparatively clumsy in appearance. Our light carriages, dog-carts and sulkies have never gained favor here, the people showing a deliberate preference for thickness and weight of material, despite any demonstration of the adequacy of vehicles of lighter construction. In order to be salable here any foreign-made carriage must suit the Scotch taste in respect to solidity of appearance.

In my opinion only an independent agency, with a repository in Glasgow or Edinburgh, can place American carriages on the market in this part of the country with any prospect of success. And the outlook for a profitable trade in vehicles of light construction, however strong and durable they may be, is not promising. Only the Scotch type of carriage can be sold in Scotland to any considerable extent.

In the last ten years a great change has come over the carriage trade, due to the advent of the motor car. The leading carriage builders have become manufacturers of motor bodies. At first the tendency among the motor-purchasing public was to buy their cars complete from the makers. But it is now a common practice to order the chassis from the manufacturer or agent, and to have the body built according to one's own special requirements by a coach maker. The carriage making concerns also sell the complete motor cars as received from the manufacturers. Several prominent firms in this city have practically abandoned carriage building to devote their attention to the motor-car trade. A member of one local firm of outstanding importance informs me that they now sell only second-hand carriages, the motor-car trade having developed to such an extent that they no longer find it profitable to make other vehicles. How long this condition will continue is a subject for conjecture, but there can be no doubt that the horse carriage has been relegated to a minor position in the market.

MR. HOPKINS RESIGNS.

A. H. Hopkins, who has for so many years successfully managed the affairs of Cartier, Chapman & Co., the pole and shaft manufacturers of Ludington, Mich., has resigned his position to take effect July 1. Mr. Hopkins has not yet definitely decided what he will go into, but is seriously considering accepting a similar position in a new western enterprise in the same line.

Mr. Hopkins is well and favorably known among the carriage manufacturers and jobbers of the country.

Mr. Hopkins will be succeeded as manager by Edward J. Frederick, of the Macey Co., of Grand Rapids.

Digitized by Google

SPECIAL TRADE NEWS FROM MICHIGAN

Newsy Notes by our Correspondent Concerning Well Known Carriage and Automobile Manufacturers in the Wolverine State.

To Double Capacity.—At a recent meeting of the directors of the Rapid Motor Vehicle Co., of Pontiac, it was decided to erect an addition which will double the capacity of the factory. Work will be begun at once, and with its completion the company expects to employ three hundred more men.

Increase of business made the change necessary. The proposed addition will be 640 feet long and 60 feet wide, of brick, and two stories high. It will be located just south of the present buildings, and will be separated from them by an alley. The factory will extend from Rapid street to Josephine street. This addition will be within two hundred feet as long as the building recently erected by the Ford Company in Highland Park, a suburb of Detroit, and which is claimed to be the largest automobile factory in the world. The Rapid Motor Vehicle Co. claims to be the largest commercial car manufacturing plant in the world. Some idea of the rapid growth of the company's business may be had when it is understood that it has been occupying its latest addition scarcely more than three months.

Guarantee a High Rate of Interest.—If the residents of Escanaba will subscribe for $50,000 in stock on which interest at the rate of 12 per cent. per annum will be guaranteed, the Denison Motor Co., of Chicago, will locate its manufacturing plant in the former city and employ two hundred men at the start. The company is engaged exclusively in the manufacture of automobile trucks, and orders for 4,000 of them already have been placed. D. C. Denison, of Chicago, is head of the concern. The proposed plant would require ten acres of land as a site.

The Largest Automobile Contract on Record.—What is probably one of the largest automobile contracts ever made in the history of the industry is announced by R. E. Olds, president of the Reo Motor Car Co., in making public an agreement for selling Reo cars, just closed with R. M. Owens & Co. It involves the marketing of $50,000,000 worth of automobiles by the Lansing concern. The Reo's present equipment will not enable it to take care of the increase in output incident to this contract, but the building plans formulated some time ago, when it was decided to increase the capital stock, will be carried out. These plans contemplate the addition of a third story to the main building and the erection of two more buildings this year, comparing favorably in size with the building now in course of construction and costing about $200,000.

Working Night Shifts.—The Reliance Motor Truck Co., of Owosso, is behind on orders, and it has been found necessary to have day and night shifts. About seventy-five men are employed. There is a very heavy demand for the big sight-seeing cars. There is talk of doubling the size of the plant and greatly increasing the working force next year.

Enlarging Their Business.—Roehm & Davison, Ltd., wholesale carriage hardware and specialties, Wayne and Woodbridge streets, Detroit, who have hitherto dealt in iron and steel only in small quantities in connection with their regular lines of business, have secured the entire ground floor of the McMillan building, next door east, and are installing a wholesale department devoted to the sale of bar steel, bar iron, hoops, bands, channels, angles, tees, sheet iron, rivets, etc. The new department will be in charge of Fred Wittman, who has heretofore been on the road for the company.

A Remarkable Showing.—Manager F. O. Arnold, of the Hillsdale Truck & Wagon Co., Hillsdale, reports that the factory is in an unusually prosperous condition. It was recently reopened after having undergone repairs to machinery. Trucks, farm gears, drays, lumber wagons and coal wagons are being turned out rapidly and the shipments for April were the best, except for one month, since the business started. There is on hand finished stock to the amount of six times more than there has ever been before; the accounts receivable are greater than they have ever been, and the accounts payable have been reduced. A change in the business is contemplated, but the officials of the company will not announce just now what it is, beyond the admission that it will materially increase its value.

New Motor Car Company Projected for Ludington.—The Utility Motor Car Co. is the name of a concern that is being promoted by Ludington business men, including A. H. Hopkins and Walter Knight. Capital stock to the amount of $50,000 already has been pledged for the manufacture of a practical type of automobile that can be used for business or pleasure with equal facility. The first chassis will not be produced there, but all the parts are to be manufactured in Ludington. Flattering offers for the plant have been made by cities in other States, but the Ludington board of trade reports that it is confident of securing the business.

Plans to Make Lansing Greatest Gas Engine Center.—Auxiliary capacity in the manufacture of gasoline engines has been obtained by the Olds Gas Power Co., of Lansing, through a contract entered into with the Ideal Motor Co. This contract, which calls for the manufacture of 500 one and one-half horsepower vertical engines, is understood to be representing the first step in the "squaring away" for the big General Motors contract, already obtained by the Olds Gas Power Co. for the manufacture of 10,000 motors and many additional, as soon as facilities for making them can be put into operation. In taking on the new contract, which is to be in operation, according to the terms, by July 1, the Olds concern is understood to have arranged for the utilization of every pound of energy in the plant. This has called for the parceling out of some of the concern's standard engines on contract. This is signalized as the beginning of the big motor boom which is expected to make Lansing the biggest gas engine center in America. Experimental work on the models contracted for with the General Motors Co. already has been started, and the first engines under the contract are due to be finished and ready for delivery by July 1.

General Motors Co. Activity.—The General Motors Co. will erect another factory building, this time in the north end of Flint. It will be just west of the big engine plant to be built by the company north of the Buick industrial buildings and will be utilized for handling the sheet metal work entering into the manufacture of automobiles made by the concerns whose output the General Motors Co. controls. The new building will be one story high, with basement, and 550 x 150 feet in ground dimensions. It is intended to have it ready for occupancy by October 1. The new factory will represent an investment of $200,000 in its construction and equipment. At a recent meeting of the executive committee of the General Motors Co. it was decided to build a large addition to the factory building of the Michigan Motor Castings Co., just west of the new No. 10

Digitized by Google

building, which is being erected by the Buick Motor Co. The work of preparing the foundation of the engine plant of the General Motors Co. in Flint is progressing rapidly. The building will be 1,021 feet in length by 350 feet in width, and the contract calls for its completion by October 1.

Internal Troubles.—John and Ida Mack, of Grand Rapids, have started proceedings in circuit court against Geo. Engel and others, as a result of troubles in the Mack Sleigh Co., Ltd. They ask an injunction restraining the defendant from incumbering, or disposing, of the property of the Mack Sleigh Co., and for the appointment of a receiver. It is charged that Engel, who owns the majority of the stock, has ignored the rights of the complainants and operated the company to his own advantage.

To Make Parts Only at Port Huron.—President Flanders, of the Everitt-Metzger-Flanders Co., manufacturers of motor cars, has announced that the company is installing about $20,000 worth of new machinery in its Port Huron plant, and will add about fifty men to its working force in that city. The company does not contemplate building in the immediate future any complete autos in the Port Huron plant, but will continue the manufacture of parts there, while the assembling will be done in Detroit. Last year complete autos were turned out from the Port Huron factory and a large portion of the space in the company's buildings was required for the storage of the cars. Now, as no more cars are assembled or stored in Port Huron by this company, more men can be put at work in the same buildings.

Soon Ready for Business.—The Walker Veneer plant, reconstructed following the fire of March 26 last, will be ready, in nearly every particular, for business by the middle of June.

New Michigan Incorporations.—Articles of incorporation have been filed by the Michigan Crank Shaft Co., of Muskegon, with $10,000 capital stock. The Standard Paint & Color Co., Detroit, $50,000; the Imperial Brass Co., Detroit, $10,000, with A. Leo Kent and T. B. Moore as principal stockholders.

As forecasted in the May issue of The Hub, the Reo Motor Car Co., of Lansing, has increased its capital stock from $1,000,000 to $2,000,000, by filing amended articles of incorporation.

The Oakland Motor Car Co., of Pontiac, has increased its capital stock from $300,000 to $400,000.

To Erect New Office Building.—The Grand Rapids Brass Co. will erect a new office building at Shawmut avenue and Court street, to cost $4,000.

Working Overtime.—The Deal Buggy Co., of Jonesville, is running behind on orders, and several departments have been working overtime for the last few weeks.

An Immense Water Tank.—The Michigan Buggy Co., of Kalamazoo, is erecting a 60,000-gallon water tank on a 12-post tower on its grounds, as a means of protection against fire. Additional water mains are being laid to the main plant. The buggy works already is supplied with an automatic sprinkler system.

Moved to Oshkosh.—Edward H. Halsey has left Pontiac for Oshkosh, Wis., where he has accepted the agency for the Rapid Motor Vehicle Co., of the former city. He will establish his headquarters in Oshkosh, and from there will cover all his territory. Mr. Halsey was one of the best known vehicle men in Pontiac. For several years he was identified with the Pontiac Spring & Wagon Works, and after that company sold out to the Cartercar Co. he accepted a position with the last named concern, resigning only a short time ago.

SECRETARY MORRISON RESIGNS.

J. T. Morrison has tendered his resignation as secretary of the National Association of Agricultural Implement and Vehicle Manufacturers, and with two Chicagoans has organized the Morrison Motor Car Company, of which he will be manager. The company will distribute in Chicago and surrounding territory the product of the Pierce Motor Company, of Racine.

Mr. Morrison was appointed secretary last fall and took charge of the association's Chicago office December 1. Prior to that time he was for many years traffic manager for the Racine-Sattley Company, of Racine, Wis.

ROUTING RULES ATTACKED.

The new trans-continental freight tariffs, effective June 5, carry the following rule:

"The rates named herein are subject to the absolute and unqualified right of initial carrier to determine routing beyond its own line."

The Interstate Commerce Commission has held that when the carriers publish such a rule in their tariffs they are within their rights in routing the freight as they please. On a car of vehicles originating in Ohio, for instance, and destined to Portland, Ore., the shipper, for various reasons, might wish to select the line over which the car should go from Chicago to St. Paul. This privilege is now denied the shipper.

BETTENDORF AXLE CO. BUILDING.

Work is progressing rapidly on an immense addition to the plant of the Bettendorf Axle Co., Davenport, Iowa, a structure having ground dimensions 500 feet square, in which steel castings are to be manufactured. The foundry will be completed about September 15, and employment will then be offered to about three hundred additional men.

BURGLAR-PROOF GLASS.

Extra Strong Plate Glass for Jewelers' Windows.

In reply to a communication from an American association, Consul William Bardel, of Rheims, furnishes the following information concerning the manufacture, in that French district, of plate glass to be utilized by jewelers as a safeguard against robbery:

The glass under consideration is manufactured at St. Gobain, in this district, and in reply to a communication from this consulate requesting particulars the manager of the works writes as follows:

It was on account of an extra audacious robbery committed in a jewelry store at Marseille that a trial was made to utilize our extra-strong, polished plate glass as a greater protection against the smashing of the show windows. While an ordinary plate glass, such as is usually put into jewelers' show windows, was smashed to atoms by one single stroke with a metal-trimmed mallet, the same attempt to break the "dalle polie" furnished by our works proved entirely fruitless. They then proceeded to throw a large piece of cast iron with extreme violence at the show window, and all they succeeded in doing was to make a small hole into it measuring only a few centimeters. Thereupon several shots of a revolver loaded with steel cast balls were fired at the show window with no further damage to the window than the entering of the balls into it to the depth of a few millimeters. The plate glass which will stand all such usage is ordinarily made of a thickness of from 20 to 25 millimeters (0.787 to 0.984 inch); but, if desired, a heavier plate can be made without in the least diminishing the transparency of the glass.

Digitized by Google

Among the Manufacturers

Thirty Days Behind Orders.—The Robinson & McGill Company, Nashville, Tenn., manufacturers of vehicles, report that they are thirty days behind with orders for vehicles of different descriptions, having had an unusually good run during the present year. The heaviest demand has been for buggies.

Good Business on Electrics.—O. H. Perry, of the Columbus Buggy Company, in speaking of conditions, said that orders for the electric automobiles made by the company were heavier than at any former period, and the department is behind in shipments.

Franklin Draughtsman Resigns.—Chas. P. Cary has resigned as draughtsman in the engineering department of the H. H. Franklin Manufacturing Company plant to accept a position with the New York Vehicle Company.

New Building for Demorest.—A nine-story building is being erected at the corner of Fifty-seventh street and Broadway, to be occupied by A. T. Demorest & Co., the carriage and auto builders.

Its First Machine.—The Corbitt Buggy Co., of Henderson, N. C., has been demonstrating the first machine it turned out on the local streets, and feels very proud of the showing made.

To Run Full Time.—The Kentucky Wagon Works, at Louisville, Ky., recently went on a full time schedule, owing to the number of orders on hand.

Has Begun Operations.—The plant of the Southern Hardwood & Spoke Company, at Slaughter, La., has been completed and operations begun on the manufacture of wagon and buggy materials. The principal stockholders in the company are Gus Dubus, John Carpenter and Jules Dubus.

Will Manufacture Taxicabs.—The Cleveland (O.) Electric Vehicle Company, formerly the Cuyahoga Motor Car Company, will shortly begin the manufacture of electric taxicabs. The reorganized concern is capitalized at $300,000, and Francis J. Wallace, formerly of New York, who floated the Citizens' Taxicab Company in Cleveland, will handle the sales.

Velie Motor Co. Extending Plant.—Ground has been broken for the addition to the plant of the Velie Motor Car Co., at Moline, Ill., which will cost approximately $100,000. The new structure will be of reinforced concrete, similar in construction to the present motor car building. Ground dimensions are 80 x 220, and the building will be four stories high with basement. The present building is 80 x 200, three stories and basement, and an additional story will be added to make it the same height as the new structure.

Appraised for the Third Time.—The receiver for the New Decatur Buggy Co., at Hamilton, Ohio, was obliged to ask the court to make a third appraisement of the property. When it was first ordered sold the appraisers chosen to fix its value estimated it as worth $58,050, but at the auction no one could be got to bid two-thirds of that amount. On a second appraisement the value was lowered to $35,000, but there were no takers. The third time the value was set at $28,000.

York Motor Co. Changes.—President S. E. Baily and General Manager and Designer James A. Kline have severed their connection with the York (Pa.) Motor Car Company, manufacturers of Pullman automobiles. Messrs. Baily and Kline, it is reported, sold part of their stock to New York parties and retained a portion. The York Motor Co. will hereafter be directed by Oscar Stevenson and Thomas C. O'Connor, formerly secretary and treasurer and vice-president, respectively. The former will act as business manager. Mr. Baily, who has an extensive business in carriage building, has started the erection of a new concrete automobile factory in which commercial cars will be built at first, and then the lines of pleasure cars added. As general manager and designer Mr. Kline contributed largely to the success of the York Company. He has propositions from a number of automobile concerns which he is considering. At present he is attending to private interests in York and Harrisburg.

Additions to Rambler Factory.—Enlargements now being made to the factory of Thomas B. Jeffery & Company in Kenosha, Wis., when combined with those buildings to be erected within the next few months will give the plant an additional space of 186,256 square feet. Added to the present space, the total will be approximately 800,000. Rambler factory construction will be followed, that of one story, solid concrete structures, with steel frames, and saw-tooth roofs. A new laboratory for testing materials will be installed, and within a year a new office building will be started.

Doubling Plant to Meet Demand.—The output of the Velie Carriage Company, Moline, Ill., for this year is greater than that of last year by 3,000 vehicles. Nevertheless the company is said to be 4,000 jobs behind in its orders, so great has been the increase to its business. To meet this situation a new building, which will nearly double the capacity of the present plant, is being rushed to completion. The new building will be used for an extension of the buggy business alone.

May Move to Minneapolis.—A rumor has been current at Stoughton, Wis., to the effect that a portion of the Mandt Wagon Company, owned by the Moline Plow Company, of Moline, Ill., would be removed from Stoughton to Minneapolis.

Think They Hold Record on Sales of Electrics.—From its various dealers throughout the country, the Anderson Carriage Company, of Detroit, builders of the Detroit electric, has received what is believed to be the record number of orders in a week's time in the electric carriage field. From Monday, April 26, to the following Saturday, thirty cars were ordered, and on Monday, May 3, ten orders were received for various models.

Phineas Jones & Co. Incorporate.—The well known Newark, N. J., wheel manufacturing firm of Phineas Jones & Co. has been incorporated. The capital stock is $100,000. Henry P. Jones, Phineas Jones and H. P. Jones are the incorporators.

Made a Long Lease.—The J. P. Clarke Co., which has been located for many years at Concord and Prince streets, Brooklyn, N. Y., has made a long lease of the property at 250-252 Pearl street, and will move their wagon manufactory to that location.

To Rebuild Spoke Factory.—The Weis & Lesh Manufacturing Company, of Memphis, Tenn., makers of oak and ash spokes and butchers' and packers' skewers, whose plant was burned recently, will immediately rebuild.

New Memphis Corporation.—The Finley-Flautt Carriage Co. has been incorporated at Memphis, Tenn., with $25,000 capital and will succeed to the carriage and general vehicle business of Cassius J. Finley Co.

Says Business Shows Improvement.—C. F. Myers, president of the United States Carriage Company, Columbus, Ohio, says

Digitized by Google

that so far this year the business of his company had shown an increase of 20 per cent. over the first quarter of last year. As yet the larger cities have not been prolific order bringers, the increase coming from the smaller towns in the West and South, but business in the East is now beginning to show improvement.

Gained Control of Mason Auto Co.—Senator F. L. Maytag and his son, Elmer H. Maytag, of Newton, Iowa, have obtained control of the Mason Automobile Company, of Des Moines, by supplying $75,000 to increase the capital stock from $50,000 to $125,000. Senator Maytag will immediately assume active charge of the company and he expects to devote his personal attention to the factory. A. B. Shriver, who has been interested in the company, will retire.

Receivers Report.—H. W. Radina and P. S. Phillips, receivers of the Millcreek Wagon Company, Cincinnati, Ohio, filed an inventory showing the assets to be valued at $63,724.86.

Files Petition in Bankruptcy.—Jefferson J. Bayless, carriage and wagon manufacturer, has filed petition in bankruptcy, with liabilities amounting to $6,797.45 and assets $1,771.63. Mr. Bayless has been in business in Knoxville, Tenn., for several years.

EFFECT OF THE MOTOR CAR ON THE CARRIAGE TRADE.

In a paper read before the Carriage and Wagon Builders' Association, of Australasia, held in April at Adelaide, Mr. R. A. Duncan said in part:

"A problem that is exercising the minds of carriage builders all over the world at the present time is what will be the outcome of the motor car industry, and how will it affect the carriage builder's trade.

"That the motor car is a serious rival cannot be denied, and in a few words to-day I wish to give expression to some phases of the question, and would gladly welcome discussion on the subject.

"The early efforts of inventors to produce a mechanically-propelled vehicle met with little success, chiefly on account of the excessive weight which was embodied in the propelling mechanism itself. As far back as 1825 Walter Hancock and others were at work endeavoring to produce a successful motor carriage, and we have records of their work, which is highly interesting. That Hancock's efforts were not without result is shown by the fact that in 1836 one of his carriages was used for regular passenger traffic between Stratford, Paddington and Islington. This carriage, like all the early carriages, was propelled by a steam engine utilizing high pressure boilers, and it is recorded that it ran on the roads for 20 weeks, and during that time traveled about 4,200 miles. From this time onward many steam cars appeared, and although some of them did a large amount of running, the evidence of such records as exist indicates that most, if not all, were incapable of continuous service without giving too much trouble to the persons running them, or were commercially unsatisfactory to their owners. We find that from 1840 onward what we now term the motor car was practically non-existent, most of the early makers having turned their attention to the traction engine instead. It was not until 1890 that the question of motor vehicles again seriously occupied the attention of inventors. Just previous to this Daimler, a notable gas engineer, invented the internal combustion high-speed petrol engine. With his knowledge of gas engine construction as a basis, he conceived the idea of making a motor designed to run at high speed, which would be capable of developing a large amount of power in proportion to its weights, and in 1884 he was successful in obtaining the first patent for a perol engine, which, although far from satisfactory, gave promise of great results.

"This invention of Daimler's practically gave birth to the modern motor car, as the principles involved in its construction were the same as we see in 95 per cent. of the motor cars in use to-day.

"Although the invention of the high-speed combustion engine of Daimler marks the start of the motor industry, there is little doubt that the great strides that have taken place would have been seriously hampered, if not altogether suppressed, had not the pneumatic tire assisted with its shock-absorbing properties. In fact, I think we can class the invention of the pneumatic tire as equal in rank, or nearly so, with the Daimler's invention in assisting to bring the motor car to its present advanced condition. The lightness of the mechanism which has been adopted could not have been attained without some shock-absorbing device, such as the pneumatic tire, which, despite all its drawbacks, has successfully resisted the attempts which have been made to oust it from being the most-favored shock-absorber at the present time with manufacturers of all classes of cars. From the time of repeal of the Locomotives on Highways Act in 1896 motor car factories have sprung up all over Great Britain, the Continent and America, and thousands of vehicles of all kinds are sold every year. For a time the demand was so great that manufacturers, in their eagerness to fulfill all orders, did not pay sufficient attention to the matter of reliability, but with increasing competition, the weak points of design and construction have been largely eliminated, and to-day we find that the motor car is simple, reliable and in great favor.

"We have noted the great strides that have taken place in the space of a few years, and with this in our minds the future of the motor industry is assured, and to what extent it will progress it is impossible to say. You will all have read the reports that have been published in our papers from time to time in reference to the Edison storage battery, which the inventor, (or is it the press reporters?) claims is going to revolutionize the whole of the vehicle industry throughout the world; but we in Australia, at the present time at any rate, have little to fear from this source, even if the claims put forth were fully substantiated. The storage battery would need to be periodically charged from some outside source of current, and it is only in large cities that charging facilities are at hand, besides whch the ordinary user would not care to have the trouble of charging. For country use it is altogether out of the question, so I think we can drop altogether this phase of the question.

"To come down to the present day, let us review the position as it confronts us now. We go into our city streets, and we see motor cars by the score. We see doctors almost universally adopting this modern means of locomotion, the business man, the commercial traveller, and, in fact, all classes of people riding about in their motor cars. Even the farmer in the remote corners of the country is quickly adopting it to take him into the townships, while the number of cars that are being used for purely pleasure only goes to show the great popularity they have attained. Why has this change come about. We may assume that there is a class of people to whom the cost of running a car hardly enters into consideration, as they have the means and will have the convenience. This class, of course, is limited, and if the motor only went to supply their wants, carriage builders would have nothing to fear from the opposition business that would result. But there are other people, to whom the ability to get from place to place quickly is of great importance, who at the same time cannot afford to pay dearly for the facilities, and these use the motor car to a very great extent to-day. This leads me to say that unless the cost of running compares favorably with the cost of a horse-drawn vehicle, then we have little to fear, for, after all, the question of cost is the deciding factor.

"From this I think it is fair to assume that the cost of running of a modern motor car does compare favorably with the horse-drawn vehicle, in fact, there is a running distance where costs about balance, while any lesser running tells in favor of the horse, and any greater in favor of the motor.

"From these conclusions I think it is fair to assume that we have a serious rival, not one that is going to wipe out our trade,

Digitized by Google

but nevertheless one that we will have to reckon with in the future, if we have not already done so in the past. Where are the landau, brougham and Victoria? These have been replaced to a very great extent by the motor car. We certainly do see some of these in our streets yet, but are we making any new vehicles of this description to take the place of those that are discarded? This is one part of our trade that has been seriously affected by the introduction of the motor car.

"The buggy and sulky building has not suffered to any appreciable extent up to the present. The reason for this is largely due to the difference in capital outlay and running costs that exists between the two systems, but is it always going to be so? We have seen introduced into Adelaide within the last six weeks a motor buggy, which has excited a good deal of interest. It has some advantage over the ordinary type of motor car, and the cost of running is claimed to be much less, but the value of these claims time alone can prove. This is only another step in the advancement of the motor, which threatens to invade our business territory, and we must treat it with respect.

"We also see the motor wagon gradually forcing its way into favor, and in the near future this must also be reckoned with. In this connection I might mention that within the last week a motor train consisting of four trucks and a propeller vehicle has been landed in Adelaide. This train is capable of carrying a load of 20 tons, and is to be used to replace horse-drawn wagons in our far northern country. From this you will see that the motor industry is progressive, and our trade is being attacked on all sides, and it behooves us to keep a sharp lookout to see that business that should come our way does not pass us by.

"From what I have said I do not wish you to understand that the carriage builder does not derive any advantage from the introduction of the motor car. On the contrary, body building for motor chassis is becoming a considerable item with a number of us, and there will always be a fair amount of this work to be done.

"But are we going to be content to do the body building only and let the motor garages reap most of the benefits of this industry, which is legitimately ours. I think it is up to us as carriage builders to step in and get the whole of the business, and so retain our prestige. Why, to-day the body making for imported chassis is slipping out of our hands, and one garage at least has equipped a body-building department, so that the whole of the work to the motor car can be done on the premises. Now as to the future. There is little doubt that the motor industry is going to progress, and will gradually take away more and more of our business, although I believe it will never completely replace the horse-drawn vehicle. Let us consider the question in all its phases, and see what stand we should take. For my part I would like to see the carriage builder grasp the opportunity now to add a motor department to his present business, and so retain that part of the trade which will, without doubt, go to the mechanically-propelled vehicle man."

WILL LOCATE AT PADUCAH, KY.

George E. Bartholomew, formerly manager of the Rock Island (Ill.) Buggy Company, which has closed out its effects and discontinued business, has accepted a position with the Mutual Wheel Company, of Moline. He will make his headquarters at Paducah, Ky., where he will have charge of the purchasing of hickory and pecan timber for the Mutual Company.

NEW AXLE FACTORY.

The Collins Axle Manufacturing Company, Wilmington, Del., has been incorporated to buy and deal in visible speed axles for propelled vehicles. Capital, $50,000. F. R. Hansel, G. H. Martin and S. C. Seymour, of Philadelphia, are the incorporators.

C. B. N. A. CONVENTION

The Week of October 18 Selected—Convention Hall, Fifth and L Streets, N. W.. the Meeting Place.

In a circular letter to the trade, dated June 10, Secretary McLear makes his announcement for the coming C. B. N. A. convention, which is in part as follows:

The thirty-seventh annual meeting of this association will be held in Washington, D. C., during the week commencing October 17, 1909.

At the same time and place the annual exhibition of parts of vehicles, automobiles, models, new inventions, harness, horse equipment and materials pertaining to the carriage, wagon, automobile and accessory industries, will be held.

For exhibition purposes the executive committee has engaged Convention Hall, Fifth and L streets, N. W., a large and good lighted hall that will accommodate all who wish to make an exhibit.

The following rules and regulations have been adopted to govern the exhibition:

Exhibitors must be either active or associate members of the association.

The exhibits must be confined to models, parts of vehicles or automobiles, and to materials used in the construction of the same, or to coachmen's outfits, harness and horse furnishings. No finished vehicle will be admitted.

This exhibition is the members' own exhibition. They can take what space they may wish, from 8 x 8 feet to 20 x 100, or larger, if they desire, and as the exhibition is entirely for the benefit of the members, and as we never know their desires about the size of space they will need until the application is received, and also on account of the manner in which the space is sold—by mail only—it is impossible for us to make a diagram of the hall. For these reasons we cannot allow each one to choose his own location when making application for space. You can readily see, if we had a diagram sent out by mail, several might choose the same location, and by so doing lead to endless confusion.

Therefore, no definite location can be allotted to any exhibitor on receipt of application. The space will be allotted in the order applications are received, and arrangements can be made when installing exhibits to group industries that desire to be so treated. Those making early application to the secretary will secure what advantage in location there may be, and also avoid the delay in securing their space on the day of opening. As far as possible, ample room will be furnished to all.

The committee will arrange to have the exhibition space policed by day and watched by night, for the better protection of the exhibits, but cannot and does not assume any responsibility for loss or damage, from any cause, so far as individual exhibits are affected. The exhibitor must arrange and care for his exhibit, and he must assume all responsibility therefor.

Exhibits can be placed in position on Friday, October 15, and on Saturday, October 16, and the exhibits so placed must not be dismantled or removed from the exhibition hall nor shall any hammering or unnecessary noise be made in preparation for removal until 4 o'clock on Friday, October 22.

And this rule is ordered strictly enforced.

All exhibits must be removed on Saturday, October 23, as the lease expires on that day.

The exhibition hall will be open at 8 o'clock a. m., and remain open until 6 o'clock p. m., every day from Monday the 18th, to Friday the 22d, and will be open all day Saturday the 23d, for the removal of the exhibits.

Secretary McLear also calls attention to the following:

Extract from the minutes of the executive committee as published.

Digitized by Google

"In relation to the order made at the Chicago convention relative to soliciting orders on the exhibition floor, the executive committee desires to call all members' attention to this, as they think a moment's reflection on the part of those not having any exhibit will convince them that it is unfair to those who have made the exhibition hall their office and salesroom for the time being, and paid for this opportunity to meet the vehicle trade, and that it is not right for any one not exhibiting to come on the floor and solicit trade that rightly belongs to those who have exhibits.

"As any member can secure space at these exhibitions if they desire to look for trade at same, they should take space and be on an equality with those who do.

"All members are welcome to visit the exhibition, but fairness to those who pay for the privilege of exhibiting should prevent all from making unfair use of this privilege."

The following resolution was passed at the convention at Chicago in 1908:

"Resolved, That the secretary of the C. B. N. A. be instructed by the association to adopt such regulations as to exclude from the exhibit hall all representatives of the accessory trades that are not members of the association.

"Resolved, That the exhibitors and their representatives be furnished with a badge showing they are exhibitors or representatives of the same."

These resolutions will be carried out and enforced, and the secretary requests the co-operation of all the members in having this done.

Full particulars and instructions can now be secured by addressing Secretary McLear, Wilmington, Del.

OVERLAND PLANS.

The Overland Automobile Company has finally arranged all details for the purchase of the plant of the Pope Motor Car Company, of Toledo, Ohio. J. N. Willys, president of the Overland company, says that within a few days contracts will be let for erecting a three-story addition to the Toledo plant, 80 x 35 feet. This new part is to be occupied by the Kinsey Manufacturing Company, of Dayton, Ohio, whose plant is to be brought to Toledo. Almost the entire output of this concern, which consists of automobile parts, will be used by the company, and the working force of this department will be increased to 500 men. The purchasing, engineering and sales departments of the Overland company will be transferred to Toledo immediately, and within four months between 1,500 and 2,000 men will be employed in the local factory. Contracts have already been let for over $50,000 worth of new machinery, which is to be placed in the new department, and also to replace certain present machines which are somewhat antiquated, or at least can be replaced by much later ones. The present plan is to manufacture two grades of machines, selling for $1,250 and $1,500.

MOTOR FACTORY ENLARGED.

The Continental Motor Company, Muskegon, Mich., manufacturers of automobile motors, had added a third story to its factory and has orders enough in sight to keep the plant busy for a year. The company has purchased the blacksmith shop of E. J. Hughes & Son adjoining for future extensions.

JACOB HABER ELECTED TO SUCCEED JACOB NEUMAN.

The directors of the Stein Double Cushion Tire Co., of Akron, Ohio, have elected Jacob Haber as vice-president and general manager of that company, to fill the vacancy left by the late Jacob Neuman.

Mr. Haber was formerly associated with the company and is well known to the trade, and he will not take up the work and will call on the carriage trade the same as Mr. Neuman formerly did.

TO INCREASE VEHICLE CAR MINIMUMS.

One of the western trunk lines has placed on the docket of the Western Trunk Line Committee for discussion at the next meeting of the committee, to be held about the middle of June, the proposition to establish new carload minimum weights on vehicles to all points in the western trunk line territory, which covers practically all the territory in the Mississippi and Missouri River valleys, making the basis of the minimum weights the same as now prevail inTexas. If the Texas plan should be adopted it would have the effect of raising the minimum weight on a 50-foot car of vehicles from 20,000 to 23,000 pounds.

AN ENGINEERING DIFFICULTY.

Engineers of the B. F. Goodrich Co. have been faced by a puzzling problem to replace the factory building containing the milling department without interfering with this important and essential part of rubber manufacture. As a result they have devised a way of bringing about the change without once stopping the mills. The old building is being torn down about the ears of the workmen while they are sheltered by a temporary room. The new fireproof structure, to take the place of the old building, will be built up around the mills, substituting the old walls for the new by degrees.

TIRE COMBINATION DENIED.

A scheme for the combination of the Swinehart Clincher Tire and Rubber Co., of Akron, Ohio, and the Mansfield (O.) Rubber Co. was proposed last month, but after considering the proposition the former company decided not to take it up. It was also proposed to move the Swinehart factory to Canton and increase its capital stock by taking in other interests. James A. Swinehart, president of the company, said that no such plan would be carried out. He said that if the company does change its location it will not be this year.

OFFICIALS RETIRE.

Announcement is made that on May 15, 1909, Frederick H. Meeker and Leland M. Cowles, respectively president and secretary and treasurer of the Hanford Wagon Works Co., Unadilla, N. Y., retired from the board of directors and as officials of the company. The new officers are: President, W. C. Hanford; vice-president, C. C. Christian; secretary and treasurer, F. N. Parsons.

MORE CARRIAGE BUILDERS TO BUILD AUTOS.

It is reported that two more well-known buggy manufacturing concerns in Cincinnati are preparing to enter the automobile field—the Anchor Buggy Company and the Hickory Carriage Company.

The Dublin (Ga.) Buggy Co. proposes to increase its capital stock to $50,000 and build autos. The company recently built a machine which met with pronounced favor.

The Davis Carriage Co., of Richmond, Ind., is contemplating manufacturing a machine.

The Hercules Buggy Company, of Evansville, Ind., has purchased the site of the Uhl Pottery Works and will erect a large factory for the manufacture of auto buggies and other vehicles. The company will spend $75,000 or more in improvements.

NEW INDUSTRY FOR CHARLOTTE.

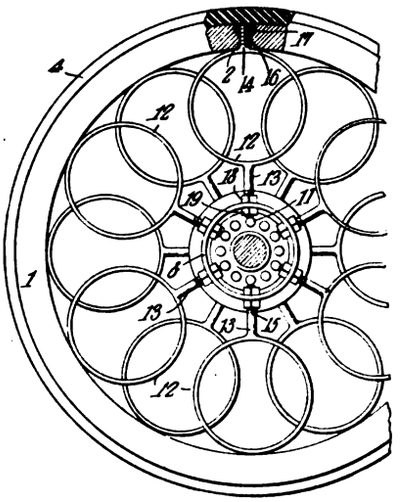
Charlotte, Mich., is to have another industry. The Rasey-Scott Mfg. Co. will manufacture spokes, pulleys and interior finish. They are moving their machinery into the new Scott garage building.

Digitized by Google

RECENTLY GRANTED PATENTS OF INTEREST TO THE CARRIAGE TRADE.

Vehicle Wheel. John Emory Hallett, Longbeach, Cal. No. 916,551. Patented March 30, 1909.

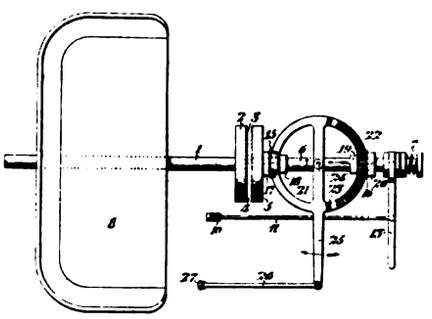
The present invention relates to improvements in wheels adapted for use on vehicles of various descriptions, and is especially adapted to be employed on automobiles, bicycles and other vehicles where it is desirable to obtain resiliency of support for the vehicle body that will insure smooth running thereof with a minimum shock due to irregularities in the surface of the road, and to secure comfort for those carried by the vehicle, and it has for its object to provide a wheel for filling these requirements that obviates the necessity of employing a pneumatic tire, the cost of maintenance of which is usually an annoyance to the user.



Motor Starting Device. Frank J. Gucken, Philadelphia, Pa. No. 916,303. Patented March 23, 1909.

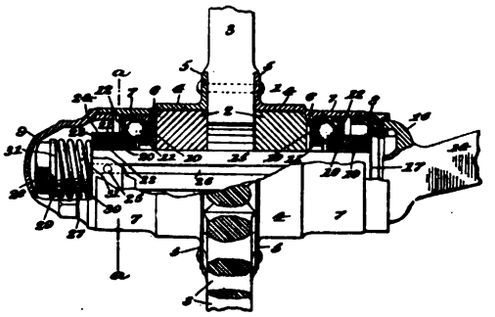
This improvement is particularly applicable to an automobile motor comprising an internal combustion engine, having a crank shaft which must be rotated to start it.

With this device when it is desired to start the motor the operator may, without leaving the seat, press upon a foot lever and thus shift the shaft, to engage the clutch teeth. Said shaft turns the bevel gears, but may be shifted longitudinally therethrough, while said gears are held in place by the lugs. Said gears are respectively in mesh with the teeth on the rocker frame, which is pivoted and has its lever arm connected by the link to the starting lever, which is manually operated and is conveniently accessible from said operator's seat.



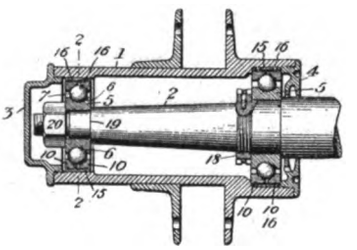
Bearing for Vehicle Wheels. Gustave A. Schacht, Cincinnati, Ohio. No. 918,600. Patented April 20, 1909.

The combination of a hub having chambered ends, ball-races held in the chambers at the ends thereof, balls in circular series in said ball-races, an axle having a spindle passed through the hub, an elastic bearing-member held against movement on the inner end of the axle spindle and having a peripheral shell for engagement with the balls in the corresponding ball-race, another elastic bearing-member mounted for endwise but not rotatory movement on the outer end of said axle spindle and provided with a peripheral shell adapted for engagement with the balls of the other race, an internal, flanged shell or lining for said last-named elastic bearing member, and a spring coiled on said axle spindle and engaged with the said flanged inner shell or lining of said last-named elastic bearing-member for retaining the same in bearing position and the whole being adapted to relieve the spindle from shock and vibration.



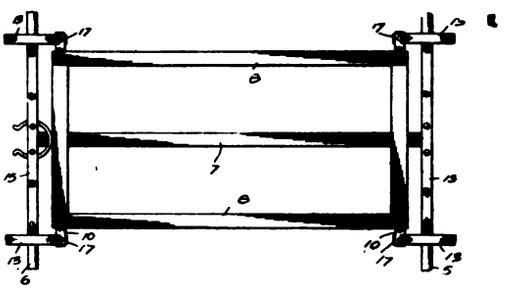
Ball Bearing. Charles R. James, Boston, Mass., assignor to Chapman Ball Bearing Company, a corporation of Maine. No. 920,149. Patented May 4, 1909.

The combination with a hub of a self-contained ball bearing comprising a ball-cone having a circular groove to receive the balls, said groove having a radius greater than that of said balls whereby each ball contacts said groove at a single point, a two-part cup, each part being provided with a narrow, concave, raised circular track having a radius greater than that of said balls whereby each ball contacts each track at a single point and means inclosing and uniting the parts of said cup, said means and the inclosed ball bearing being removable from said hub.



Vehicle Spring. Joseph A. Grandy, McClure, Mich. No. 920,321. Patented May 4, 1909.

The combination, with the bed and axles of a vehicle, of a downwardly-bowed spring secured at its ends to each end piece of the bed, an upwardly-bowed spring secured centrally to each of the first-mentioned springs, a downwardly-bowed spring secured centrally to each axle and located in a vertical plane parallel with and in spaced relation to that of the adjacent up-

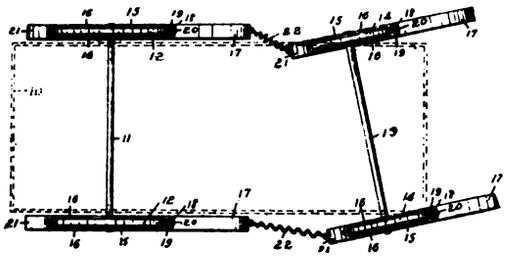


Digitized by Google

wardly-bowed spring, and separate spiral springs arranged to connect.

Sled Runner Attachment for Wheeled Vehicles. Edward M. Henle, Ogden, Iowa, assignor to Wagner Manufacturing Company, Cedar Falls, Iowa. No. 921,109. Patented May 11, 1909.

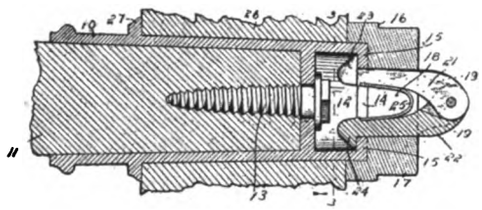
An improved vehicle runner comprising a channel bar made of spring metal, and of segmental shape, and comprising slightly more than a half circle, said channel bar being designed to receive vehicle wheel, and a runner member made of a metal



channel bar large enough to admit the first mentioned channel bar therein, and comprising a flat body portion, a forward end portion curved upwardly and then rearwardly, and having the upper end of the first mentioned channel bar admitted in the end thereof, and secured thereto, the rear end of the latter mentioned channel bar being extended upwardly and having the rear end of the first mentioned channel bar inserted therein, and attached thereto.

Hub Fastener. Arived E. Roxberg, Rosingtown, Minn. No. 920,657. Patented May 4, 1909.

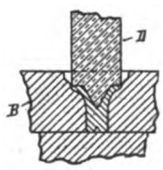
The combination with an axle journal having a cavity in the outer end and with an aperture communicating with the cavity



whereby portions of the journal overhang the cavity, a cap bearing over the outer terminal of the journal, and two arms swinging from the cap and extending through the aperture with laterally directed terminals engaging in the rear of the overhanging portions of the journal cavity.

Process of Making Carriage Curtain Knobs. Fred A. Neider and William Hafer, Augusta, Ky., assignors to The F. A. Neider Company, Augusta, Ky. No. 921,147. Patented May 11, 1909.

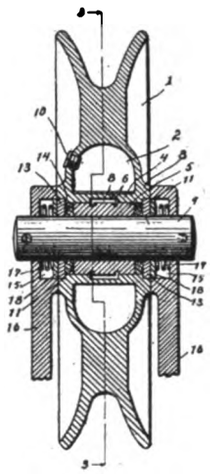
A process of forming a blank containing the base and neck of a carriage curtain knob, and consisting of heading a short



rod to form the base, forming a tapering cavity in the base by forcing the metal thereof outward so as to elongate the blank and form both the neck and the external tapering portion joining the base and neck.

Self Lubricating Wheel. John F. King, Kalamazoo, Mich., assignor of one-half to Arthur Lyman Pratt, Kalamazoo, Mich. No. 921,412. Patented May 11, 1909.

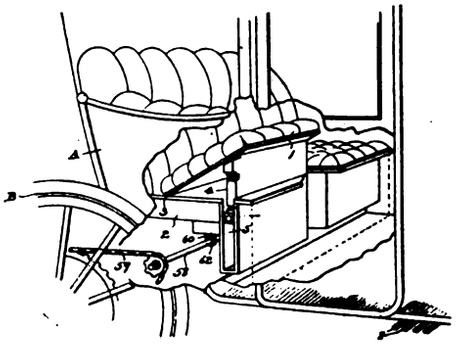
A wheel comprising a hub and having an oil reservoir surrounding said hub, a bushing having peripheral grooves and oil holes therethrough, said grooves opening into said oil holes, partition walls dividing said reservoir into a plurality of compartments, the inner ends of said partition walls being arranged to partially embrace said bushing, having openings therein coacting with said grooves in said bushing to form connecting passages for said oil reservoir compartments, packing washers arranged in said hub at the ends of said bushing, and bearing



washers seated in the ends of said bushing, and bearing washers seated in the ends of said hub on the outside of said packing washers and overlapping the same.

Passenger Register for Public Vehicles. Harvey E. Pim, Lincoln, Neb. No. 920,993. Patented May 11, 1909.

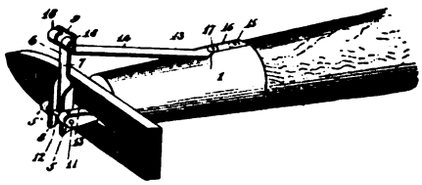
In a passenger register for vehicles, the seat cushions pivotally secured, supports for said cushions pivotally secured there-



to, casings containing a register for each cushion and having pivoted tops, means to actuate said casing tops, and the cushion supports operatively connected with the top actuating means.

Whiffletree Hook. Thomas Morcom, Norwood, Ohio. No. 921,267. Patented May 11, 1909.

In a device of the class described, a ferrule having a con-



stricted, bifurcated end, a tongue pivotally carried at the bifurcated end of said ferrule, said tongue having a head, and a resilient retainer arranged upon said ferrule, said retainer having the free end thereof bifurcated and upwardly disposed, whereby when said tongue is received in the bifurcated portion of said retainer, the upwardly disposed portion engages at the outer side of the head of said tongue to lock the latter in position.

The reorganization of the Iowa Wagon Company, at Shenandoah, Iowa, has been completed by the incorporation of a company of the same name with a capital stock of $25,000. The directors are J. H. Eischeid, J. J. Doty, E. A. Read, J. W. Perry and C. Nordstrom.

Digitized by Google

RECENTLY GRANTED PATENTS OF INTEREST TO THE CARRIAGE TRADE.

914,942—Wheel. H. A. Glasrud and J. Anderson, Hatton; said Glasrud assignor to O. T. Petterson, Northwood, N. D.
914,659—Vehicle Wheel. J. E. Harrod, Indianapolis, Ind.
914,722—Delivery Wagon. J. R. Holland and H. Silver, Binghamton, N. Y.
914,575—Thill Coupling. C. N. Jackson, Canby, Cal.
914,844—Wheel. J. C. Jackson, Xenia, Ohio.
914,428—Whiffletree Coupling. J. B. Kriner, Novinger, Mo.
914,961—Extension Top for Vehicles. W. Leppert, Junction City, Oregon.
914,599—Vehicle Tire. W. D. McNaull, Toledo, Ohio.
915,058—Vehicle Propelling Mechanism. W. H. Summers, Worland, Mo.
914,894—Vehicle Chock. A. L. Swearingen, Eatons, W. Va.
914,896—Air Cushion for Automobiles. J. B. Taylor, Jr., East Liverpool, Ohio.
914,901—Sleigh Runner. W. E. Turner, Escanaba, Mich.
915,008—Sulky. T. Wilson, New Haven, Conn.
915,408—Brake Shoe. G. M. Beard, Hanover, Pa.
915,326—Vehicle Spring. J. F. Beatty.
915,264—Vehicle Spring. W. W. Blair, Newtonville, Mass.
915,069—Tire Case. F. E. Bowers, New Haven, Conn.
915,337—Vehicle Spring. F. N. Emley, Creamridge, N. J.
915,585—Vehicle Wheel. C. W. French, Kingfield, Me.
915,093—Vehicle Wheel. S. H. Garst, Moline, Ill.
915,344—Short Turn Vehicle. H. F. Gleason, assignor to Kansas City Vehicle Co., Kansas City, Mo.
915,440—Recoil Check for Vehicles. H. A. House, Bridgeport, Conn.
915,685—Wagon Brake. C. F. Leibly and C. C. Wilson, Seattle, Wash.
915,101—Running Gear. F. D. Lingenfelter, Syracuse, N. Y., and W. E. Cutts, Wyncote, Wyo.
915,304—Vehicle Wheel. T. Midgley, Columbus, Ohio.
915,470—Vehicle Spring. C. Owens, Chattanooga, Tenn., assignor to Montague Mailing Machinery Co.
915,623—Lock for Wagons. G. A. Parks, Lexington, Mo.
915,478—Fifth Wheel. J. I. Ray, Bluffton, Ga.
915,227—Adjustable Resistance Device for the Rebound of Vehicle Springs. G. N. Scott, Chicago, Ill.
916,089—Storm Front for Vehicles. D. Argerbright, Troy, Ohio.
916,264—Tire. R. R. Brown, Livermore, Cal.
915,743—Hack. J. A. Costa, East Cambridge, Mass.
916,272—Vehicle. W. W. Cook, Fort Ripley, Minn.
915,831—Hub Attaching Device. R. T. Daniel, Lynchburg, Va.
916,118—Hub for Automobile Wheels. A. A. De Mars, assignor of one-half to H. Coulby, Lakewood, Ohio.
916,122—Vehicle Wheel. W. J. Doyle, Evanston, assignor of one-half to J. M. Collins, Chicago, Ill.
916,303—Motor Starting Device. F. J. Gucken, Philadelphia, Pa.
915,769—Motor Vehicle. R. Huff, assignor to Packard Motor Car Company, Detroit, Mich.
916,009—Vehicle Wheel. W. S. Plummer, St. Louis, Mo.
916,194—Draft Equalizer. J. O. Price, Mark Center, Ohio.
916,020—Dumping Wagon Bed. P. E. Ricker, Alexandria, Ind.
915,889—Wheel Lift. J. H. D. Rosan, New York, N. Y.
915,796—Vehicle Brake Mechanism. A. S. Ross, North Meehoopany, Pa.
916,209—Tire Heater. G. M. Smallwood, Riverside, Cal.
916,213—Axle Box and Spindle. B. E. and M. E. Stevenson, Redding, Cal.
915,902—Axle. J. E. Symons, Chicago, Ill.
916,059—Spring Wheel. L. E. L. Themke, Strathcona, Alberta, Can.
916,402—Wheel. M. J. Adams and P. P. Adams, Turkey River, Iowa.
916,830—Whiffletree Hook. W. O. H. Bergman, Bottineau, N. D.
916,668—Tire. J. T. Carithers, Morning Sun, Iowa.
916,842—Spring Wheel. A. Carlson and O. Karlson, Sioux City, Iowa.
916,917—Whiffletree. G. F. Danielson, Youngstown, Ohio.
916,551—Vehicle Wheel. J. E. Hallett, Longbeach, Cal.
916,929—Wheel. A. Hanson, Alpena, Mich.
916,480—Wheel. A. Norrander, Clara City, Minn.
916,769—Wagon Brake. A. J. Olson, Kloten, N. D.
916,784—Vehicle Tire. B. Ross, Buffalo, N. Y.
917,524—Wheel. R. W. Bateman and L. H. Bateman, Leeds, Eng.
917,533—Four-Horse Doubletree. C. A. Bradley, Haviland, Kan.
917,001—Wheel. C. B. Chase, Worcester, N. Y.
917,258—End Gate Fastener. F. P. Cudahy, Jefferson, Iowa.
917,563—Automatic Wagon Brake. R. T. Duke, West Point, Ark.
917,422—Motor Vehicle. C. Durkee, Vicksburg, Mich.
917,287—Valve Releasing Means for Dumping Vehicles. J. M. Goodwin, Mount Vernon, N. Y.
917,431—Sleigh. J. E. Hobbs, North Berwick, Me.
917,072—Vehicle Brake. C. Z. Huffman, Luray, Va.
917,309—Vehicle. C. de Kando, Budapest, Austria-Hungary.
917,457—Short Turn Running Gear. V. K. Kline, Lititz, Pa.
917,465—Motor Vehicle. J. N. Leach, Melrose, Mass., assignor to Judson L. Thomson Mfg. Company.
917,324—Corner Iron for Vehicle Bodies. L. W. Loving, Paris, Tenn.
917,353—Automobile Support. A. J. Parker, Newark, N. J.
917,127—Running Gear for Four-wheeled Vehicles. R. Pintsch, Menasha, Wis.
917,158—Spoke Fastener. G. E. Schaeffer, Irondale, Mo.
917,493—Tire. H. E. Schindler, Sisseton, S. D.
917,684—Self Propelled Vehicle. J. L. Van Nort, St. Louis, Mo.
917,228—Vehicle Tire Grip. E. J. Williams, Salt Lake City, Utah.
918,129—Vehicle Brake. H. Copeland, Beallsville, Md.
918,431—Sleigh Propelling Mechanism. J. D. Frye, assignor of one-third to L. A. Stuart, St. Johnsbury, Vt.
918,035—Tongue Hounds. P. A. Gehring, Kenosha, Wis.
918,141—Wagon Jack. D. A. Gilchrist, Belgrade, Mont.
918,441—Sleigh Knee. P. Gossline, Bagley, Minn.
917,945—Wagon Brake. J. H. Huehn, Beloit, Iowa, assignor to C. Keener, Urbana, Ohio.
918,056—Support for Vehicle Umbrellas and Vehicle Canopies. H. L. Johnston, Troy, Ohio.
918,166—Automobile Steering Post. C. T. Koenigsburg, and H. Koenigsberg, Sr., Holland, Mich.
917,953—Vehicle Spring. R. Lancaster, Newark, N. J.
917,883—Vehicle Wheel. G. W. Morris, Racine, Wis.
918,884—Vehicle Wheel. G. W. Morris, Racine, Wis.
917,889—Pneumatic Tire. B. Noldner, Breslau, Germany.
917,899—Clip for Singletrees. S. Rogers, Fort Payne, Ala.
917,967—Wheel. J. J. Schmitz, Cincinnati, Ohio.
918,204—Vehicle Door. G. E. Seidel, Richmond, Ind.
918,721—Vehicle Wheel Rim. J. M. Alderfer, Sharon Center, Ohio.
918,644—Vehicle Wheel. L. W. Barnhart, Van Wert, Ohio.
918,820—Tire for Vehicles. D. P. Boyd, Toledo, Ohio.
918,657—Three-speed Transmission Gearing. R. W. Coffee, Richmond, Vt., assignor to L. M. Keizer, Baltimore, Md.
918,741—Vehicle Lock. A. G. Feistel, New York, assignor of one-half to O. Trill, Woodhaven, N. Y.
918,840—Singletree. W. E. Forwood, Lodi, Cal.
918,987—Shock Absorbing Device for Vehicles. C. H. Foster, Cleveland, Ohio.
918,846—Tire. F. J. Gostlin and L. Mueller, Jr., Akron, assignors of one-third to C. W. Bonstedt, Aultman, Ohio.
919,011—Dumping Wagon. C. Heinley, Amityville, N. Y.
918,550—Rubber Vehicle Tire. C. O. Henderson, Dayton, Ohio, assignor of one-third to W. A. Pickens, Indianapolis, Ind.
918,865—Steering Connection for Traction Engines. G. Kirkland and W. White, Winnipeg, Manitoba, Canada.
918,756—Vehicle Wheel. M. T. Long, Helena, Okla.
918,684—Tire. N. Macbeth, Dunallan, St. Annes-on-the-Sea, Eng.
918,685—Driving and Transmitting Mechanism for Wheeled Vehicles. W. D. Marks, Westport, N. Y.
918,630—Draft Equalizer. W. W. Winger, Wolcott, Ind.
919,684—Wagon Coupling. S. A. Biggers, McLean, Texas.
920,018—Steering Wheel. E. S. Bryant, Detroit, Mich., assignor to P. L. Hussey, Cleveland, Ohio.
919,538—Speed Changing Mechanism. L. Chevrolet, Philadelphia, Pa.
919,825—Vehicle Wheel Designated as Double Safety Bolster Wheel. L. Clark, Detroit, Mich.
919,826—Vehicle Wheel. W. H. Clausen, Luxemburg, Mo.
919,329—Variable Speed Gear. A. Du Brul, Newport, Ky.
919,564—Gearing for Motor Vehicles. F. Everett, San Jose, Cal.
919,337—Vehicle. P. Forschler, New Orleans, La.
919,576—Variable Speed Reversing Mechanism. C. E. Henroid, Neuilly, France.
919,358—Vehicle Wheel. T. B. Jeffery, Kenosha, Wis.
920,065—Reverse Gearing. F. G. Johnson, assignor to Eureka Reverse Gear Company, Hartford, Conn.
919,588—Speed Controlling Device. J. W. Jones, New York, N. Y.
919,938—Protector and Reinforcement for Pneumatic Tires. W. J. O'Neil, Akron, Ohio.
919,779—Automobile. G. A. Schacht, Cincinnati, Ohio.
12,949—Draft Equalizer, reissue. H. C. Scott, Ritzville, assignor to Harrington Hitch Company, Harrington, Wash.
919,964—Dump Wagon. O. C. Seelow, Chicago, Ill.
919,973—Carriage Drive. J. J. Sullivan, Eagle Mills, Ark.
919,661—Cushion Tire. C. Weiland, Chicago, Ill.
919,985—Wagon Brake or Lock. F. G. Wetzel, Prairie du Chien, Wis.
920,713—Hinge Joint for Folding Wind Screens. A. C. Auster, Birmingham, Eng.
920,523—Tire. G. T. Beckers, Los Angeles, Cal.
920,546—Wind Shield. H. C. Crammer, Philadelphia, Pa.
920,289—Pneumatic Tire. J. W. Earnhardt, Los Angeles, Cal.
920,299—Wagonbox Construction. F. A. Falk, Stacyville, Iowa.
920,897—Sand Band for Vehicles. R. E. Gay, Harrison, Mich.
920,321—Vehicle Spring. J. A. Grandy, McClure, Mich.
920,736—Self Lubricating Axle Spindle. E. W. Hanna, Milledgeville, Ill.
920,735—Automobile Tire. M. Hanford and D. L. Taylor, Malden, Mass.
920,142—Motor Vehicle. R. Huff, assignor to Packard Motor Car Company, Detroit, Mich.
920,468—Vehicle Wheel. H. O. Jackson, assignor to Jackson Wheel Company, Chicago, Ill.
920,603—Wheel for Vehicles. E. E. Michelin, Clermont-Ferrand, France.
920,657—Hub Fastener. A. E. Roxberg, Rosingtown, Minn.
920,662—Short Turn Vehicle Gear. T. Sandstrom, Indianapolis, Ind.
920,398—Draft Attachment for Wagons. W. F. Schoepflin, Edwall, Wash.
920,685—Wheel. J. S. Strawn and R. W. Davies, Avonmore, Pa.
920,216—Tire. J. C. Taylor, New York, N. Y.
920,690—Resilient Wheel. F. C. Thomas, Mill Valley, Cal.
920,699—Shield for Rubber Tires. D. E. Walker, Indianapolis, Ind.
920,512—Dumping Wagon. T. Wright, Jersey City, N. J.
921,073—Axle Journal and Hub. J. D. Brett, Cordele, Ga.
920,910—Vehicle Spring. E. F. Brown, Chicago, Ill.
921,528—Wagon Shaft. C. Erickson, Tower City, N. D.
921,530—Carriage Top Attachment. P. Felix, Kenner, Pa.
921,613—Wheel. H. E. Keyes, Homestead, Pa., assignor to Triumph Automobile Tire Company, Wheeling, W. Va.
921,412—Self Lubricating Wheel. J. F. King, assignor of one-half to A. L. Pratt, Kalamazoo, Mich.
920,984—Vehicle Wheel Hub. T. L. McConnaughey, Hagerstown, Ind.
921,267—Whiffletree Hook. T. Morcom, Norwood, Ohio.
921,151—Automobile Tire. H. Parsons, Deer Lodge, Mont.
921,161—Tongue Truck. C. A. A. Rand, Chicago, Ill.
921,471—Shock Absorber for Vehicle Springs. M. D. Shilling, New Castle, Pa.
921,294—Hub Band. J. A. Slater, assignor to National Malleable Castings Company, Cleveland, Ohio.
921,174—Pneumatic Tire. W. H. Snyder, Kenton, Ohio.
921,177—Convertible Vehicle. C. H. Stratton, Muncie, Ind.
921,493—Vehicle Wheel. G. R. Williams, Little Rock, Ark.
921,788—Vehicle Brake. R. P. Baird, Berry, Ky.
921,947—Vehicle Spring. L. C. Burnet, assignor to Burnet Compound Spring, Inc., Newark, N. J.
921,817—Tongue Truck. W. R. Exline, Milwood, W. Va.
921,692—Singletree Safety Socket. W. G. Graham, Winnipeg, Manitoba, Canada.
922,278—Automobile Wheel. O. A. Hamre, Arriba, Colo.
922,423—Automatic Wagon Brake. A. C. Harryman, Louisville, Ky.
921,710—Pneumatic Tire. G. Jacobs, Des Moines, Iowa.
921,996—Wheel. U. S. Jenkins and J. G. Broman, Chicago, Ill.
922,157—Vehicle Seat. J. Lamont and D. E. McCombs, Como, Ill.
922,169—Spring for Automobiles, etc. C. A. Lieb, New York, N. Y.
921,862—Vehicle Spring—E. M. Mayhew, assignor of one-half to T. H. Pegram, Mooresville, N. C.
922,308—Rear Axle for Automobiles. F. C. Miller, Cincinnati, Ohio.
922,332—Sleigh and Sled. J. Rantasa, Vienna, Austria-Hungary.
922,344—Wheel. B. C. Seaton, Detroit, Mich.
922,351—Vehicle Frame. C. J. Slater, assignor of one-half to P. L. Williamson, Oakland, Cal.
922,055—Automobile Swivel Lamp for Automobiles. J. O. Spang, assignor of one-half to J. E. Hammell, Haileybury, Ont., Can.

Digitized by Google

922,358—Hub Boring Machine. S. A. Taylor, assignor to Silver Manufacturing Company, Salem, Ohio.
921,912—Wheel Hub. W. C. Thede, Chicago, Ill.
921,936—Anti-Skidding Device for Wheels. R. M. Winsch, Lansdale, Pa.
Copies of above patents may be obtained for fifteen cents each by addressing John A. Saul, solicitor of patents, Fendall Building, Washington, D. C.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE CARRIAGE TRADE.

Patents Expired April 12, 1909.

472,518—Spring Vehicle. C. C. Bradley, Syracuse, N. Y.
472,545—Vehicle Axle. W. J. Miller, R. S. McBean and J. W. Burnett, Colorado, Tex.
472,587—Axle. W. M. Rankin, Little Rock, Ark.
472,724—Vehicle Spring Coupling. W. Boughton, Mansfield, Ohio.
472,834—Fifth Wheel for Vehicles. J. W. Taylor, Vermillion, S. D.
472,853—Whiffletree. S. E. Burke, Edon, O.
472,856—Vehicle Wheel. H. Carmont, London, England.
472,894—Fifth Wheel. P. Lugenbell, Greensburg, Ind.

Patents Expired April 19, 1909.

473,189—Vehicle Axle. A. Hoeffler and F. L. G. Clapman, Stevens Point, Wis.
473,211—Wagon Seat. G. E. Daniel, Thompson, Mo.
473,226—Whiffletree. W. H. Holsclaw, Louisville, Ky.
473,329—Machine for Bending Vehicle Shafts. T. E. Montague, West Lorne, Canada.
473,330—Phaeton. W. N. Morrell, Waterloo, N. Y.

Patents Expired April 26, 1909.

473,577—Running Gear for Wagons. L. D. Hurd, Wellsville, N. Y.
473,596—Vehicle Hub. I. M. Warner, Bronson, Mich.
473,607—Vehicle Hub. G. Blechschmidt and P. Blechschmidt, Quincy, Ill.
473,728—Wheel. L. J. Crecelius, St. Louis, Mo.
473,812—Vehicle Wheel. A. Bauer, Sandusky, Ohio.
473,837—Hub. R. Green, Birmingham, England.
473,881—Vehicle. I. H. Johnson, Paw Paw, Mich.

Patents Expired May 3, 1909.

473,895—Draft Equalizer. F. L. Anderson, Audubon, Iowa.
473,902—Draft Equalizer. P. Bouck, Trent, S. D.
473,904—Wheel Hub. R. Brent and E. Brent, Wilkes-Barre, Pa.
473,948—Machine for Setting Tires. B. McGovern, Norwalk, Conn.
474,113—Vehicle Running Gear. J. J. Black, Cleveland, Ohio.
474,151—Fifth Wheel. E. B. Smith, Cincinnati, Ohio.

Patents Expired May 10, 1909.

474,392—Tire Shrinker. J. M. Liles and J. B. Williams, Rockingham, N. C.
474,457—Valance for Vehicle Tops. T. H. Parry and C. C. Hull, Indianapolis, Ind.
474,559—Device for Keeping Stalls Clean. C. S. Kellogg, Chesterton, Ind.
474,565—Whiffletree. H. Poth, Grafton, Pa.
474,582—Wagon Tongue. J. W. Maxwell, Fair River, Mass.
474,589—Vehicle Tire. A. T. Brown, Syracuse, N. Y.
474,611—Two-Wheeled Vehicle. R. D. Scott, Pontiac, Mich.

Patents Expired May 17, 1909.

474,816—Wagon Tongue. R. Condon, Lyons, Iowa.
474,817—Wagon Body. R. Condon, Lyons, Iowa.
474,818—Vehicle. R. Condon, Lyons, Iowa.
475,051—Axle Lubricator. G. W. Beal, Highlands, Colo.
475,133—Draft Equalizer. L. B. Miller, Enterprise, Kan.
The above lists of patents, trade marks and designs of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City.

AUTOMOBILE IMPORTS SHOW INCREASE.

The monthly summary of the Department of Commerce and Labor shows that during the month of April 185 automobiles were imported of a value of $312,159 as compared with 58 valued at $148,603 for the corresponding period of 1908. This, added to previous imports, brings the total for the ten months up to 1,300 machines, with a value of $2,357,129. This is far in excess of the figures for last year, which were 902 cars, valued at $2,176,428, and exceeds the number, but not the value, of the 1907 importations—1,008 machines and $3,505,388 value.

Of the machines imported in the month the geographical distribution is as follows:

United Kingdom	7	$18,557
France	136	203,954
Germany	8	21,964
Italy	29	56,477
Other countries	5	11,207

In addition there were parts brought in amounting to the sum of $50,997. The table of distribution shows that every country except Italy doubled its importation for the month, both in number of machines and value.

The exportations for the same month tell a different story, for the exports of domestic manufacture were nil, while the exports of foreign manufacture show only four machines valued at $12,579, and no parts.

INFLUENCE OF LARGER WHEELS.

The fact of the influence of large wheel diameters, so thoroughly discussed a few years ago by manufacturers and resulting in the adoption of 36-inch wheels by nearly every maker of large cars, is coming to the front again as the result of the recent meritorious performances of the wheels with increased measurements. Carriage manufacturers have long recognized the material advantages accruing to the use of the larger sizes, but it was not until recent years that the automobile manufacturers generally took up with the idea.

Beginning with the agitation of two years ago, sizes were increased all along the line, but a few braver ones did not stop with the generally accepted 36-inch size. Now it appears that the latter were in the right, and sizes again may be subjected to an upward revision which will make a new standard for large cars.

There are now on the American market two cars which may be had with large, or, as they have been called, "carriage-sized" tires. One of these, the one expressing the preference for the larger size of the two, recently came through a very severe endurance contest with a nearly perfect score, while the large tires were the only ones in the whole "bunch" of contestants which went through without any trouble.

In many cases of trouble with deep mud and other severe road conditions, the bigger wheels were always "on the job," and, as in mud, their very size was an advantage to the car so equipped.

Thus also in the recent one-gallon economy contest in New York City the larger sizes were always to the fore. Of the first four but one was small, and that not very small. The average of these four was 34 inches, which is commonly regarded as a large size. Down at the end of the table are found all of the small sizes and but one of the large ones. This would almost allow of the deduction that large tires, meaning large diameter wheels, are a form of added economy. In this connection it is to be regretted that two exactly similar cars with different sized wheels were not in the contest so that this point could be settled. It is believed that 38 or 40-inch wheels, and a gear ratio which took this into account, would have allowed the winner to improve even the excellent and very noteworthy score made.

One factor which formerly contributed to the use of small diameter wheels, or rather which made them a necessity, is no longer in force. This is the matter of tire sizes. At first, pneumatic tires were made only in small sizes, which meant small wheels or solid tires. Now, this no longer holds, as tires may be had in any desired size, and tire manufacturers would gladly make other larger sizes if the demand warranted. So, one by one, keeping pace with the increase in demands, the obstructions and possible factors which have held back the use of larger wheels have been removed, or reduced to a negligible quantity.

All of the arguments applied to the use of any size larger than 28 inches apply with equal force to the still larger sizes above 36 inches. Summing up all of the points, the time appears ripe for another increase in the size of automobile wheels. —The Automobile.

NEW TRUCK COMPANY GETS GOOD START.

A charter has just been granted to the R. L. Morgan Company, of Worcester, Mass., to manufacture motor trucks. About seventy-five men will constitute the working force at the start, which will be made in the large three-story brick building formerly occupied by the Crompton-Thayer loom works. Back of the new enterprise are Ralph L. Morgan, the designer of the truck; Henry E. Whitcomb, director of the Merchants' National Bank; F. B. Durfee, treasurer of a local building company, and others. Mr. Morgan will be president, Mr. Whitcomb treasurer and manager, while Mr. Durfee will act as vice-president.

Digitized by Google

Trade News From Near and Far

NEW FIRMS AND INCORPORATIONS.

William Swenman will open a wagon shop at Shakopee, Minn.

McDougal & Baxter is the name of a new wagon making and repair company at Delhi, N. Y.

The A. M. Shaner Co. has been incorporated at Lynchburg, Va., to manufacture, buy and sell vehicles and farming implements.

The Wood Vehicle Spring Wheel Co., capital $100,000, has been incorporated at Providence, R. I.

The Clarke Wagon Co., Brooklyn, N. Y., capital $5,000, has been incorporated.

The Durham (N. C.) Vehicle & Harness Co. has been incorporated with $25,000 capital.

The International Spring Wheel Co., Columbus, Ohio, capital $25,000, has been incorporated by H. L. Olmstead and others.

Jefferson Vehicle Company, Charlestown, W. Va., capital $5,000, has been incorporated by C. F. Wall and others.

A $50,000 wagon and carriage factory is being projected for Center, Tex., by a company headed by J. J. Hines, of Houston.

The Automobile Wheel Co., Richmond, Va., capital $500,000, by R. McBullington, president, to manufacture and sell automobile wheels, has been incorporated.

E. Pohle & Son will deal in new and second-hand vehicles at Salem, Ore.

L. J. Judkins Co., Merrimac, Mass., to manufacture and sell carriages of all kinds; capital $100,000; president, L. J. Judkins, Merrimac; vice-president, F. W. Phillips.

It is announced that $1,000 has been subscribed towards the establishment in Hughesville, Pa., of the M. Gillis Wagon Company's works, which will be located on ground already purchased.

The Hercules Wheel Co. has been incorporated in Evansville, Ind., with a capital stock of $75,000.

R. A. Ritchey has engaged in the vehicle and implement business in Oconto, Neb.

J. D. Cloud has engaged in the vehicle and implement business in Canton, S. D.

Denning & Erich have engaged in the vehicle and implement business in Herrington, Wash.

George Moll and Jacob Sebin are about to engage in the vehicle business in Winchester, Kan.

Mr. Garber has engaged in the vehicle and implement business in Grand Island, Neb.

O. R. Carver and others are establishing a buggy factory in Morristown, Tenn.

The Stanton-Lindburg Hardware & Implement Co. has engaged in the vehicle and implement business in Fort Smith, Ark.

M. Hodgson is establishing an implement and vehicle warehouse in Little River, Kan.

Tall & Marsden have engaged in the vehicle and implement business in Edgerton, Wis.

F. I. Emery is engaging in the implement and vehicle business in What Cheer, Iowa.

McKinney & Armstrong have engaged in the vehicle and implement business in Auburn, Neb.

J. W. Pavlovic is engaging in the vehicle and implement business in Merrill, Iowa.

Carpenter & Bledsoe are engaging in the vehicle and implement business in Lamro, S. D.

J. J. O'Harra is engaging in the vehicle and implement business in Albion, Neb.

The Henderson-Hull Co. has been incorporated in Savannah, Ga., and will erect a buggy factory.

Swanson & Rodway are engaging in the implement and vehicle business in Fairview, S. D.

The Freeman Implement Co. has engaged in business in Freeman, S. D., and will handle a complete line of implements and vehicles.

Will Lashbrook has opened up a wagon shop at Hermon, N. Y.

W. A. Hicks has opened a new carriage shop at Mattapan, Mass.

Iowa Wagon Company, Shenandoah, Iowa, capital $25,000, to manufacture and sell farm wagons, farm trucks, etc., has been incorporated at Shenandoah, Iowa.

BUSINESS CHANGES.

The Cook Outfitting Co. has bought the Jack Rutledge buggy and wagon business at Fayetteville, Tenn., and will close it out.

Mr. Dingledine has purchased the implement and buggy business of the Chillicothe (Ill.) Hardware Co.

Ed. Burg will retire from the Burg Wagon Co., at Burlington, Iowa, and make a trip to Europe for the benefit of his health.

D. J. McDonald disposed of his implement and vehcile business to the Salzer Lumber Company, at Monango, N. D.

George E. Zimmerman has sold his vehicle and hardware business in Anatone, Wash., to James Boggan.

J. J. Sandness has purchased the stock of buggies, implements, etc., of A. Kocher, in Canby, Ore.

Clift & Sons have purchased the buggy and wagon business of the Wright Hardware Co., in Bluff City, Kan.

Louis & Welton have sold their buggy and implement business to J. W. Roubinet, in Montour, Iowa.

Fred M. Allendar has purchased the stock of vehicles and hardware of J. Hanna & Co., in Sterling, Kan.

Andrews & Hewitt have succeeded to the vehicle and implement business of McCormick & Andrews, in Clarksville, Mich.

A. C. Frige has sold his implement and hardware business in West Bend, Wis., to S. C. Lenge.

H. A. Boyer has purchased the implement and vehicle business of Cavanaugh & Frink, in Faribault, Minn.

C. A. Melgaard has sold his vehicle and implement business in Volin, S. D., to A. Hoklin.

G. M. Brown has purchased the stock of vehicles, etc., of the Pflug Implement Co., in Exeter, Neb.

Knipe & Frederickson have succeeded to the vehicle and implement business of Knipe & Umbaugh, in New Hartford, Ia.

Marion Kiser has purchased the vehicle and implement stock of R. C. Skinner, in Forest, Ill.

John Schladetsky has purchased the implement, vehicle and hardware business of R. C. Dethman, in Hale, Iowa.

C. F. Harris has sold his vehicle and implement business in Tarsney, Mo., to J. W. Corn.

F. W. Montague has succeeded to the vehicle and implement business of Heminger & Montague, in Chanute, Kan.

H. B. Rinebarger has purchased the vehicle and implement stock of the Red Oak Implement Co., in Griswold, Ia.

Harvey Haddox succeeds to the vehicle and implement business of G. Kleinemeier, in Western, Neb.

The South Texas Implement & Vehicle Co. has succeeded to the business of the South Texas Implement & Transfer Co., in Houston, Tex.

C. O. Groton has purchased the vehicle and implement business of L. L. Latham, in Kanawha, Iowa.

S. P. Pino has purchased the vehicle and implement business of Henry J. Dodge, in Ithaca, Mich.

Digitized by Google

T. F. Stroud & Co. have purchased the plant of the Harrison Wagon Co., in Grand Rapids, Mich., and will move it to Omaha, Neb.

H. B. Finlayson has purchased the vehicle and implement business of H. R. Coles, in Summerfield, Kan.

The Madison Wagon Co. succeeds to the business of Miller Bros., at Madison, Ind.

The buildings and plant of the Y. G. Huff Buggy Company, at Mt. Airy, N. C., have been bought by the Mt. Airy Buggy Company.

FIRES.

The buggy, wagon and harness stock of H. L. Crosby, in Winnsboro, Tex., has been destroyed by fire.

W. E. Vanderkolk has suffered a fire loss in his harness and vehicle stock in Exeter, Neb.

In the recent fire in Elgin, Neb., the buggy and implement stock of Friesbee & Fee was damaged.

The stock of wagons, etc., of George McCauley, in Anoka, Minn., has been destroyed by fire.

A blaze, resulting from a bolt of lightning which struck a dynamo in the plant of the Weis & Lesh Mfg. Co., at Memphis, Tenn., on May 1, practically wrecked the main building and contents with an approximate damage of $25,000.

Fire igniting in waste paper and oil in the Moran Carriage Company, Louisville, Ky., on May 26, completely gutted the building. Loss about $20,000.

MISCELLANEOUS.

A. Morris has built an addition to his carriage and blacksmith shop at Wichita, Kan.

W. D. Hoyt is erecting a new vehicle and implement warehouse in Manchester, Iowa.

J. K. Sykes, a hardware dealer of Roseburg, Ore., is closing out his vehicle department.

The Herrington Hardware Co., of Herrington, Kan., has erected an addition to its store and will handle buggies and implements in the future.

C. D. Thayer is erecting a new business building in Narka, ing in Mt. Hope, Kan.

Banks Griffith is erecting a new store building in Newton, Kan., for his vehicle and implement stock.

C. D. Thayer is erceting a new business building in Narka, Ark., for his vehicle and implement stock.

W. J. Meyers has built an addition to his carriage works, at Alexandria, Pa.

P. E. Holloway has resigned as treasurer of the Miller Mfg. Co., at Monroe, Wis.

F. Willing & Sons have purchased a large building for the vehicle and implement business at Zanesville, Ohio.

E. C. Yaw, Jr., is erecting a large carriage repository at Canandaigua, N. Y.

Gold & Weinburg will build an addition to their repair and carriage shop at Hartford, Conn., to cost $5,000.

J. W. Mosliner has added another story to his carriage and blacksmithing factory at Bristol, Conn.

ADVANCE IN STEEL BARS.

The steel manufacturers have made another advance of $1.00 a ton in the price of steel bars, the second advance of the same amount in a month.

OBITUARY

Edward Shaughnessey.

Edward Shaughnessey, many years engaged in carriage building, died May 2, at his home in Milford, N. H. A few years ago he retired from active business and retired to his estate at East Milford, where he passed his declining years in peace and comfort. He is survived by a wife, four sons and three daughters.

Sebastian Blimline.

Sebastian Blimline, the well known carriage builder, automobile manufacturer and dealer, died of a complication of diseases at his home at Sinking Spring, Pa., on May 23. He had been in failing health for several months and was bed-fast four weeks. He had been in the carriage business for more than thirty-eight years. He leaves a wife, four sons and two daughters.

John A. Holmes.

John A. Holmes, of Earlville, N. Y., died on May 13, aged 65 years. He was engaged in the wagon making business for many years. His wife, two sons and three daughters survive.

Thomas Strangman.

Thomas Strangman, pioneer carriage builder of Milton Lower Mills, Mass., and one of the most prominent G. A. R. men in Dorchester, died sudenly of heart disease at his home, 8 Rosewood street, May 24, aged 80 years, after being assisted to his home by a neighbor who found him in a fainting condition at Mattapan square.

Mr. Strangman was born in Prince Edward Island, May 10, 1829. When four years old he moved with his parents to Newburyport. There he learned the trade of carriage building. In 1851 he moved to Milton Lower Mills, where he founded the Strangman carriage works, which ever since has been an important industry of the town.

He is survived by a wife and a son.

John F. Luking.

John F. Luking, veteran carriage and wagon builder, died at his home, 1615 North Seventh street, St. Louis, Mo., May 25. Deceased was engaged in the manufacturing business in St. Louis for more than fifty years. He is survived by his wife and a sister, who lives in Germany.

Geo. W. Roe.

George W. Roe, a resident of Oneida, Ill., for over half a century, passed away at his home in that city May 26. He leaves to mourn him his wife and three children.

Mr. Roe was born October 15, 1829, in Buckinghamshiere, England. He established a wagon factory in Oneida in 1855, which he personally maintained for many years.

Jacob Mayer.

Jacob Mayer, 134 West Eighteenth street, a resident of Chicago for fifty-six years, died at his home, June 2, after an illness of three months. Moving to Chicago in 1853, he was foreman in the roundhouse of the Chicago, Burlington & Quincy Railroad, but later entered business as a manufacturer of wagons. He conducted his business until fatally stricken.

Mr. Mayer is survived by his wife and nine sons and daughters, all of whom are grown.

John Erb.

John Erb, aged 62 years, for forty-three years a carriage manufacturer at Phoenixville, Pa., died May 27.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

Motor Wagons.

There is an increasing demand for motor wagons for commercial purposes as indicated by recent enlargements of capacity and by the erection of new plants. The commercial vehicle has had an up-and-down road to its present position, and it has overcome successfully every obstacle and every prejudice in its pathway. The latest figures of operative work indicate either more exact workmanship or more care in operation and less carelessness in handling.

The special service to be rendered is receiving more study in the shop. It is not only necessary that it be a motor wagon, but that it be specifically constructed for its work. Builders have been endeavoring to furnish cars that are proof against carelessness and over hard usage. The present successful types are models of mechanical refinement and durability.

The Power Behind Good Roads.

If there were some magic method for collecting the value in dollars of the improvement in land values effected by good roads, it would not be long before there would be raised a fund sufficient to cobweb the country with highways of superb construction. The turning point in the good roads agitation was reached when communities realized that good roads greatly increased the value of land along and near the new roads. If the disciples of Henry George could apply their taxation theories to land, it would not be long before the good roads problem would be solved on a national scale.

The ambition of Roman emperors make possible and real the highways of Europe. The instinct for pleasure in travel by the automobile is making possible the ultimate establishment of good roads throughout the United States. The taking up of heretofore unused lands along automobile roads is frequently referred to in the automobile press. Coupled with this is the desire of thousands to escape from our civilized dungeons—our cities. These two facts are pregnant with possibilities for the future of the industry, the magnitude of which is not realized.

Automobile Parts.

Carriage accessory manufacturers have been able of late to increase their shop activities in some lines by manufacturing certain automobile "parts," for which they are especially equipped. It is observed by one or two prominent manufacturers in these lines that there is quite a field open for the building up of business. The automobile industry is becoming more and more specialized, and in this process the accessory manufacturer finds his opportunity. Finer finish is one of the later requirements. Marked progress is being made in researches into steel manufacture, and though the secrets of excessively strong steel are hard to wrench from nature the chances are favorable for a new quality, or rather qualities of steel for various automobile purposes which will minimize breakage and wearing of parts.

Motor Buggies.

A few carriage builders have set out to develop the trade of supplying motor buggies to agricultural communities. Their chief line of argument is the economic one and upon maximum service. A sort of campaign of education has been inaugurated to show the farmers and the business interests which serve them, that the motor buggy and motor wagon is, as measured by horse power and the amount of service that can be rendered, by all odds the cheapest. Even within the past twelve months the sale of motor buggies has reached surprising proportions.

The builders who are devoting attention to this developing branch are, by the way, the busiest in the industry at the present time. Their arguments are sound and they impress the farmers.

It is gratifying to observe the change in the sentiment of law-makers all over the country with reference to automobile legislation. There are evidences of a general relaxation of stringent rules and laws. The automobile users are themselves contributing to this change by a temperate regard for local regulations. Laws are not made for those who obey laws, but for those who break laws. The industry has indirectly suffered from that element which had not a proper regard for the rights, feelings and prejudices of the public.

The expedient is being adopted in some instances in builders of trucks to guarantee all repairs and keep in good condition for any specified time. The builder can do this better than the users. The assurance of having trucks kept in good running order ought to overcome some of the objections made to their use.

A western firm handling a new automobile recently called all its representatives over the United States to the factory to acquire an acquaintance with its construction and equipment and operation. This is a wise move, and ought to enable the representatives to talk with more force and confidence.

A new auto buggy is appearing in an Indiana factory which has two cylinders and drum, with planetary gear set. It is lubricated from the crank case and the drive shaft is in tubing: eliptic springs, front and rear, with internal brakes to rear wheels.

Another well capitalized auto buggy plant has just been announced in Ohio. The success which has attended the pioneers in this new field is attracting capital and enterprise.

Digitized by Google

MOTOR CARS IN ENGLAND.

Reduction in Price of British Cars—American Competition.

Consul-General Robert J. Wynne reports that up-to-date and interesting figures in the London Morning Post of April 16 show the gradually lessening cost of motor cars, coincident with their improvement in England.

These figures will furnish American automobile makers the latest data necessary to determine what margin for profit there may be in the endeavor to place additional American machines abroad in competition with the more-favored home-made article. It appears that in 1901 a 6-horsepower British car without a body cost $1,850, while to-day a two-seated 7-horsepower machine complete can be purchased for $900.

Only firms of wide repute can be considered in discussing competition under existing conditions, it is argued, for it would be folly for any small firm to attempt to compete against the big ones. A comprehensive idea of the manner in which the motor car has developed in England from a small to a powerful and very speedy vehicle in the brief space of eight years may be gathered from the following summary of prices:

Year.	Nominal horsepower	Price of chassis.	Price of car complete.
1901 ...	6	2-cylinder, $1,950.	$2,200
1903 ...	22	4-cylinder, $4,950.	$5,575
1904 ...	28	4-cylinder	Model K, $5,250
1905 ...	30-40	4-cylinder	Windsor model, $4,625
1906 ...	35-40	4-cylinder	Royal model, $6,250
1907 ...	45	4-cylinder	Bilton phaeton, $4,615
1908 ...	58	4-cylinder, $4,125.	¾ landaulette, $5,500
1909 ...	38	4-cylinder, $2 800.	$3,400
1909 ...	22	Live-axle, $2,375.	$2,975

The Morning Post says:

"Whereas the 6-horsepower car of 1901 was to all intents and purposes a machine of no more than 6 horsepower, the nominal 38-horsepower machine of 1909 has an engine capable of developing something nearer 60 horsepower for hour after hour without "fatigue," while the 22-horsepower car is in like proportion powerful far beyond the extent indicated according to Royal Automobile Club rating, so that for $425 more than the cost of the 6-horsepower chassis of 1901 the motorist can buy a machine of at least 37 actual horsepower (nominal 22-horsepower 1909 type), embodying not only all the refinements of latest practice, such as a live-axle drive, but also a two-year guarantee, with the exclusive silent sliding-valve type of motor that has received the seal of success in the severest officially observed engine trial on record in any country. Taking the figure given above for a 6-horsepower car of 1901 as being $2,200 complete, these prices may be quoted for complete cars:

Year.	Horsepower.	Price.	Year.	Horsepower.	Price.
1905.....	8	$1,025	1905.....	12	$1,700
1906.....	8	1,035	1906.....	10-12	1,335
1907.....	8-10	995	1907.....	10-12	1,350
1908.....	8-10	995	1908.....	10-12	1,350
1909.....	7- 9	700	1909.....	10-12	1,350

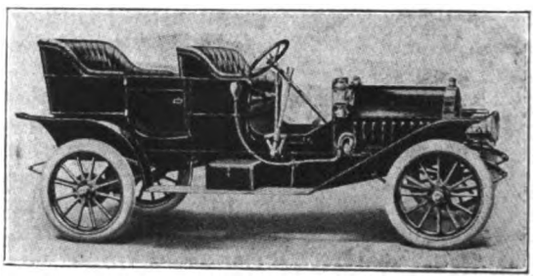
"The lists illustrates two things: First, how the price of the quite small car has been appreciably reduced from $1,025 in 1905 to $700 in the current year (over 25 per cent.); second, it has not been possible to reduce the price of the larger sized machine to an equivalent extent."

HEAVY TIRE LOSS IN AKRON FIRE.

The B. F. Goodrich Co. lost heavily in a fire which destroyed a seven-story power and storage building belonging to the Hower Building, in Akron, Ohio, on May 18. On account of the fact that the Goodrich Company were cramped for room in their factory by reason of the removal of several old factory buildings, they had been storing their surplus stock in the Hower building. At the time the fire broke out they had $225,000 worth of rubber goods in the building, consisting principally of tires, with a quantity of packing fabric. None was saved, but the stock was entirely covered by insurance. The Diamond Rubber Co. had been using the same storehouse, but fortunately had removed some $20,000 worth of goods a short time before the fire, so that they escape loss. The destruction of the rubber represented a greater loss than that of the building itself.

NEW PATERSON MOTOR CAR.

The W. A. Paterson Company, of Flint, Mich., is sending out advance folders showing three new styles of automobiles—a five-passenger touring car, a four-passenger demi-tonneau, and a four-passenger tourabout. The illustrations show an exceptionally attractive car, thoroughly up-to-date and very strongly built. The Paterson 30 has a wheel base of 104 inches; gauge, 56 inches; pressed steel frame; full elliptic rear and semi-elliptic front springs; 32 x 3½-inch tire; internal expanding and external contracting brakes, both on rear hubs; irreversible steering gear. The features of the motor are four-cylinder vertical, four-cycle, four-inch base, four-inch stroke, water-cooled, thermo-syphon circulation; horse power, 24 to 30; sub-frame motor suspension; jump spark ignition; magneto and reserve set of dry cells; splash lubrication, oil level being maintained by plunger oil pump; change gear, sliding, selective type, three speeds forward and one reverse; cone clutch-clutch,



fly-wheel and transmission enclosed in an aluminum housing, which is an extension of the crank case; absolutely dust and dirt proof; shafts drive with two universal joints. The machine is equipped with two gas lamps, with generator, two side oil lamps, tail lamp, horn and complete tool kit.

This new style of car is strictly a 1910 car, the purpose of the company being to distribute a few sample cars to pave the way for producing them on a large scale next year.

STANDARDIZATION OF AUTO TIRE RIMS.

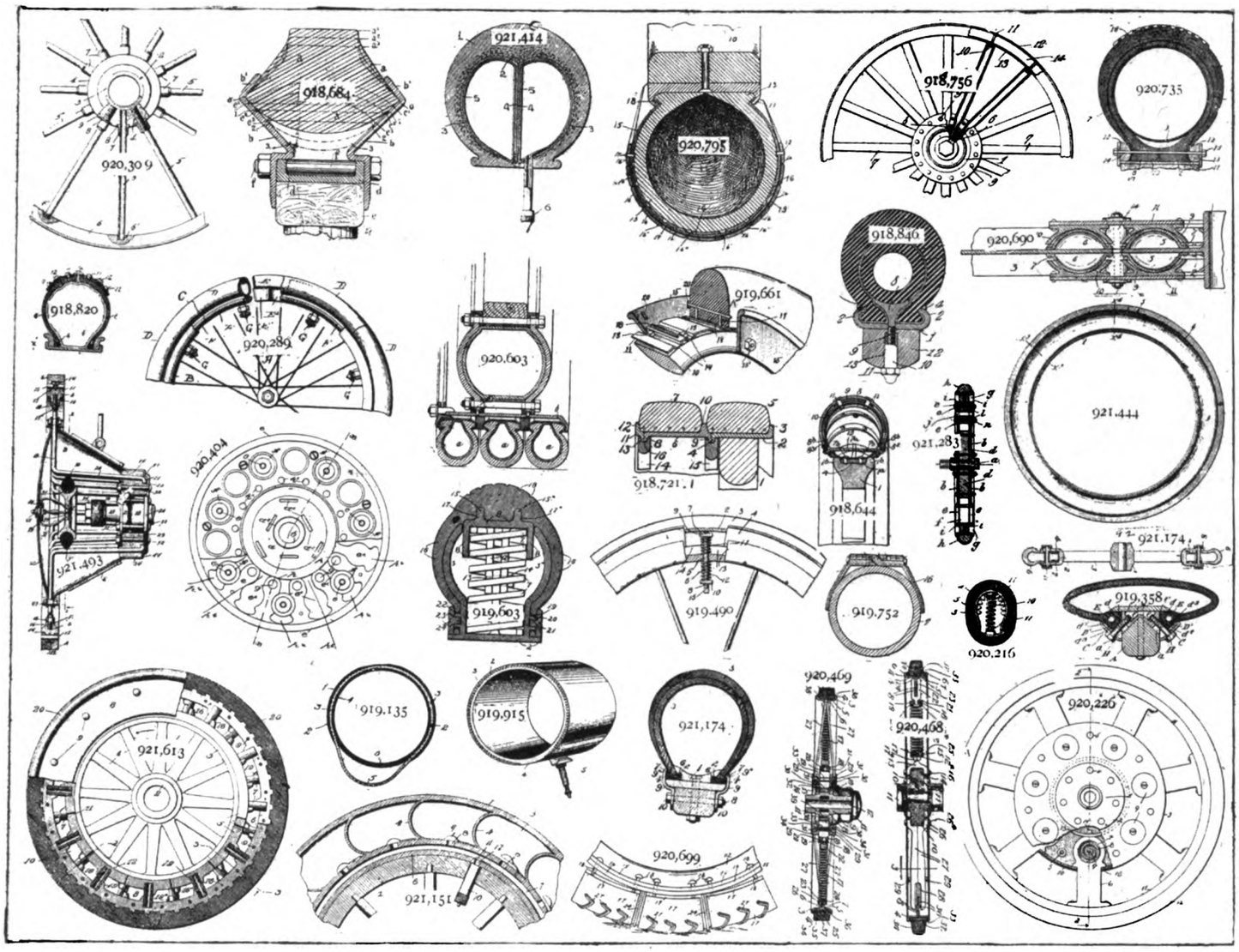
As a result of the incorporation and organization of the United Rim Co., an outgrowth of the old Clincher Rim Manufacturers' Association, the final step will be taken toward the complete standardization of automobile tire rims of all makes, and the season of 1910 will undoubtedly see all the rim companies making a product of nearly the same design, says the Akron correspondent of the India Rubber World. The realization of a uniform rim has been the desire of automobile manufacturers for years. The old rim association accomplished the co-operation of the rim manufacturers to the extent that uniform sizes of clinchers were established, but owing to the fact that the detachable features of each make were of a different design, the standardization was not entirely satisfactory. The United Rim Co. was incorporated on April 23 as an Akron company, under the laws of Ohio, by E. C. Shaw, general manager of The B. F. Goodrich Co.; H. E. Raymond, vice-president of the Goodrich Company; A. H. Marks, vice-president of the Diamond Rubber Co.; P. W. Litchfield, superintendent of the Goodyear Tire and Rubber Co., and Ernest Hopkinson, representing the United States Rubber Co. The company was incorporated with a capital stock of $10,000, but H. E. Raymond says it will own no property. Offices will be situated in Akron, Ohio. Douglas Patton, of Akron, and who is not connected with any rubber company, was elected president; E. C. Shaw, vice-president, and P. W. Litchfield, secretary and treasurer. Several meetings of the company have been held, and progress is being made in the development of a uniform detachable rim that will possess the best features of the Marsh, Goodyear, Goodrich and Midgely rims.

Digitized by Google

A LESSENED NUMBER OF CYLINDERS?

Following the extreme swing of the power and number of cylinders pendulum of two years ago, toward the maximum and approaching what was once facetiously called "road locomotives," there is something of a tendency toward the other extreme, the backward swing of the pendulum, says Automobile.

This was first apparent in the foreign market. Not only were cab chassis brought out in large numbers powered with the despised (of two years ago) two-cylinder engines, but also numerous private cars of small sizes. Following the lead of the Continental engineers, English makers took up the same trend, but more conservatively. Now, time having shown the wisdom of this policy in the success of the two-cylinder cabs plying in London, the makers of the Isles are about to throw conservatism to the winds and go deep, very deep, into the lowly two-cylinder vertical engine.



Recent Inventions of Resilient Wheels, Tires, Etc.—The numbers given are those of the Patent Office. Anyone desiring further information can obtain a complete copy of any patene by addressing the Commissioner of Patents, Washington, D. C., giving the number of the patents wanted and enclosing five cents for each copy ordered.

And what has been done in this country in the same line? how many cars of this type are to-day to be had in the open market, and what progress in experimentation is being made? This is best answered in figures. There are five American makers putting out engines with less than four vertical cylinders, but of these two are two-cycle and one air-cooled, which reduces the number to two, and both the product of the same engineer.

Seeing, then, that the American maker is apathetic toward this important question, let a few of the real and very apparent advantages he brought out for inspection, taking, for example, the two-cylinder engine. Poor balance mechanically is urged against it, but, in the light of modern progress in and fuller knowledge of the art of balancing, it would appear as if this one prominent disadvantage has been looked at so long that it appears out of all proportion to its importance. It is true that the two-crank two-cylinder engine has an irregular turning effort, but the two-cylinder single crank motor has not, as the explosions occur at regular intervals.

There have been a number of reports of cars projected for the season of 1910, and these have included various engines differing from the regular four-cylinder, now general, but not one of those advanced has included the motive power discussed above, namely, the two-cylinder. If old-established houses with fame and prestige like Panhard, De Dion, Renault, C. G. V., and other in France; Adler, Laurin-Clement, Opel, and others in Germany; Siddeley, Napier, Arrol-Johnston, Humber, and more in England; to say nothing of Zust, and cars of similar quality elsewhere, if these firms can build and sell a two-cylinder vertical engine without damaging the reputation of years, but rather enhancing it, what have the American manufacturers to fear in following their lead? Surely here is the chance to capture the medium-priced trade of America's numerically great middle class.

Digitized by Google

WORKING DRAFT OF LIMOUSINE MOTOR BODY WITH SKELETON BOTTOM QUARTER.

In the accompanying working drawing of a limousine motor body is offered a design possessing features which can lay a strong claim to progressive features over similar cars generally obtaining.

The lines of the body are cut up in the top and bottom quarters, to a finer balance of the surfaces than is usual in limousine body design. The top quarter is designed to give a double light framing, thus utilizing the surface to better advantage than the single light offers, while it signally adds to the general appearance of the body.

The bottom quarter and the standing pillar are both spaced to give character and the important property of balance to the controlling elements of the design. The quarter is cut up to kill surface, but without encroaching upon utility.

The quarter is framed with a double bottomside, so as to produce the bottom section, S, a skeleton. This bottomside is worked in line with the corner pillar, as the controlling line of the hind body, and is fixed independently. It is half-check framed to the body bottomside, and edge plated 3-16 in. thick on the inside, and supported with a strut stay as explained.

The body quarter is, by the adoption of a skeleton quarter, made with a shallow and more elegantly proportioned surface outline, with which the standing pillar quarter harmonizes, while their curvature is of enhancing outline in balancing the full quarter's depth, and blends truly into the body bottomside and on to the front pillar.

The design of the chauffeur's seat quarter is on lines to harmonize with the body, while its poise is a relief to the tiered design of front seat now so commonly used in motor body design. The chariot pillar is proportionately balanced in its surface strength, and the mouldings throughout are of a width to impart firmness to the body's outline.

The hanging of the door is a departure in the style of hinge used in this, and ordinary brougham body door hanging. It will be seen that the top hinge of the door is made with a flat surface to project in its pin center as far back on the outer surface of the pillar as a concealed hinge does when let in on the inside, the center pin lining with the center pin of the outrigger on the bottom of the door. The advantage is that the hinge at top is kept on the outside, flat, and in line with pillar, and is let in level to the outer surface, while the foot that takes the door is fixed to the top rail, the hinge foot being made to provide for this kind of fixing. The method is a simple and clean way of hanging a limousine door, while it gives all the advantages of a concealel hinge in throwing the door back clear of the pillar when open, and outward at the same time.

In a future issue of The Hub a lengthened illustrated article on the hanging of doors, both on motor bodies and also those of horse-drawn carriage bodies will be given, and the subject thoroughly dealt with both practically and theoretically. There are hosts of body makers, but how few in the great army of this side of coach making can make and hang a door properly. In the article it will be explained how this should be done. Hanging a carriage body door constitutes one of the finest points in coach body making, and is always an index to a well or badly made body.

The canopy of the body is projected to line with the windage screen; the corners of the cant rail framing are strengthened with light bracket pieces, which are supplemented with strut stays, which the elevation explains.

The body is framed up in the usual way of limousine body construction, which has been so frequently explained in The Hub's motor body drawings It is therefore unnecessary to detail the drawing in this particular.

Fig. 1 shows the elevation design, the body being framed and panelled in high class style of construction. The front boot is solid sided, a false pillar piece being fitted to the side to line with the outside of the seat, starting away from the bracket bottomside with a ⅜ in. thickness and curved up to line with the seat's projection, as shown in the half front section, Fig. 2. In this section the half widths of body are worked to the cross design; the front window is also shown in half section frame, and these frames may be made to hinge up into the roof, or drop down behind the back of the front seat.

Fig. 3 shows the half back section and the moulding design of the framing and the line of the top back light. The position of the skeleton quarter bottomside is also shown. It will be seen that it is kept a ¼ in. within the elbow line point, by which the panel quarter is allowed to stand out, the projection making an effective relief to the body. The position and curvature of the plated bead is also shown, so that the back and elbow moulding surfaces may be clearly defined.

Fig. 4 shows the lines of the plan of construction for the body maker. To the experienced workman this will present little mystery or darkness. Point 1 shows the base line of the body, 2, the line of turnunder returned into the front of the chariot pillar point.

Point 3 shows the body's projection from the bottomside below the door line, and in to the outer line of the front boot side. The main bottomside is got out in one piece, its greatest width being from A to B. The line of the boot's side is shown in chain line. The outside of the boot, of course, takes its bearing on the inside of the chariot pillar. The body's cross bar framing is also shown. The sizes for building are as follows:

Length of body on chassis, 9 ft. 6 in. from dash to hind cross bar; width of hind quarter, 30 in., on elbow line 29 in.; width of door, 23 in.; full width of chariot pillar at bottom, 10½ in.; at top, 2¼ in. from the door line. Length of front quarter on elbow line, 22 in.; on seat line, 22 in.; from seat to dash, 24 in. Length of bracket, bottomside piece, 19 in.; depth of boot side, 14½ in.; depth of front quarter on pillar line, 11½ in.; at elbow, 16½ in.

Depth of skeleton quarter from bottom to body quarter bottomside, 14 in. Depth of panel quarter over moulding to bottom of elbow, 10 in.; width of standing pillar quarter over moulding to door line, 8 in.; depth of same over moulding on door line, 12 in.

Depth of top quarter from bottom of elbow to top of roof, 35 in. Length of canopy from front pillar, 4 ft. 5½ in. Width of hind quarter lights, 11 in. by 26 in.; width of body on back, 42 in.; over pillars, 54 in.; over hind bottomsides across chassis at back, 43 in. Width in front, 39 in. Turnunder on pillar, 3 in. Width across front chariot pillars at top, 48 in. Width across front seat, 46 in. over all; across top of pillars, 48 in.; across elbow point, 44 in.; on seat line, 42 in. Width of back light, 14 in. by 18 in. Full width of bottomside on plan on standing pillar line, 6½ in.

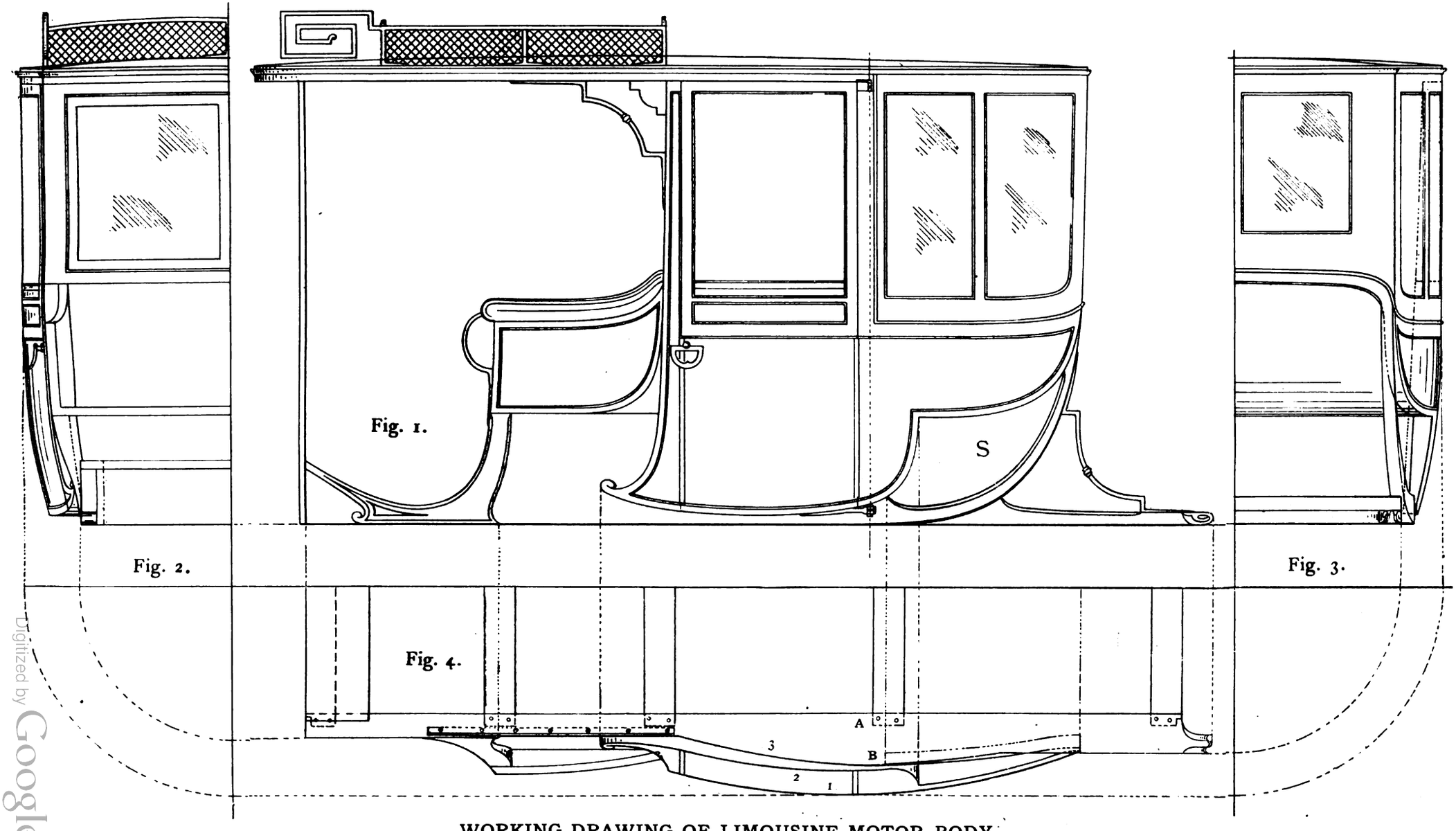
CAMERON CO. CONSOLIDATION.

The Cameron Motor Company, organized last fall with New York capital to control the output of Cameron cars from the factories at Beverly, Mass., and New London, Conn., has been absorbed by the old company. The capital of the Cameron Car Co., of Beverly, Mass., has been increased to $500,000 and the affairs of the enlarged organization will be handled by E. S. Cameron, general manager; W. T. Marsh, treasurer, and H. W. Doherty, sales manager.

CINCINNATI CARRIAGE BUILDERS AND THE AUTO.

A concrete structure of six stories with 200,000 square feet of floor space is being built for Haberer & Co., carriage makers of Cincinnati, Ohio. The Jewel Carriage Co., of Carthage, has had its auto plant in operation for five months. Quite a number of the carriage manufacturers of Cincinnati are investigating the auto business, while a number have built cars for experimental purposes.

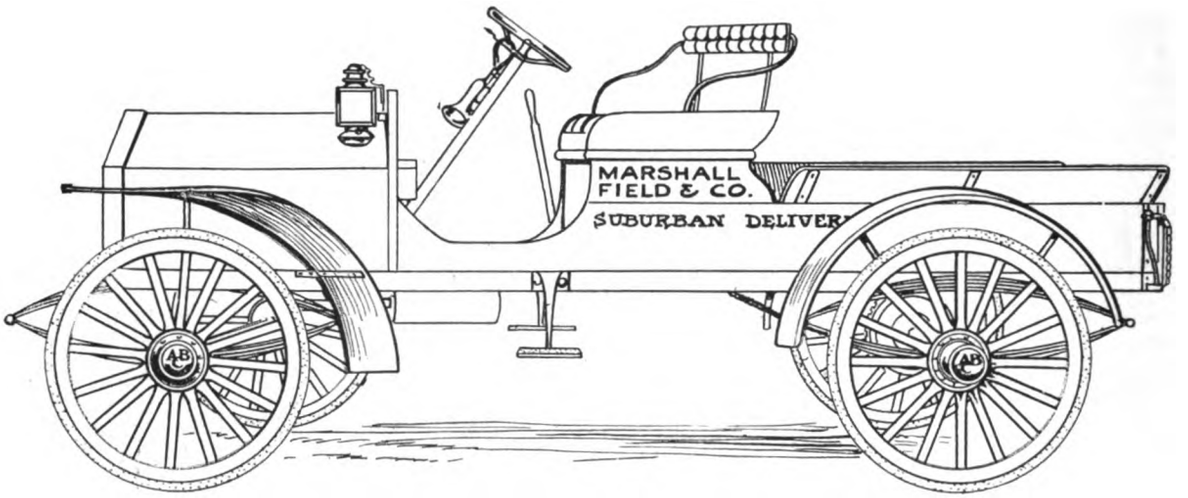
Digitized by Google



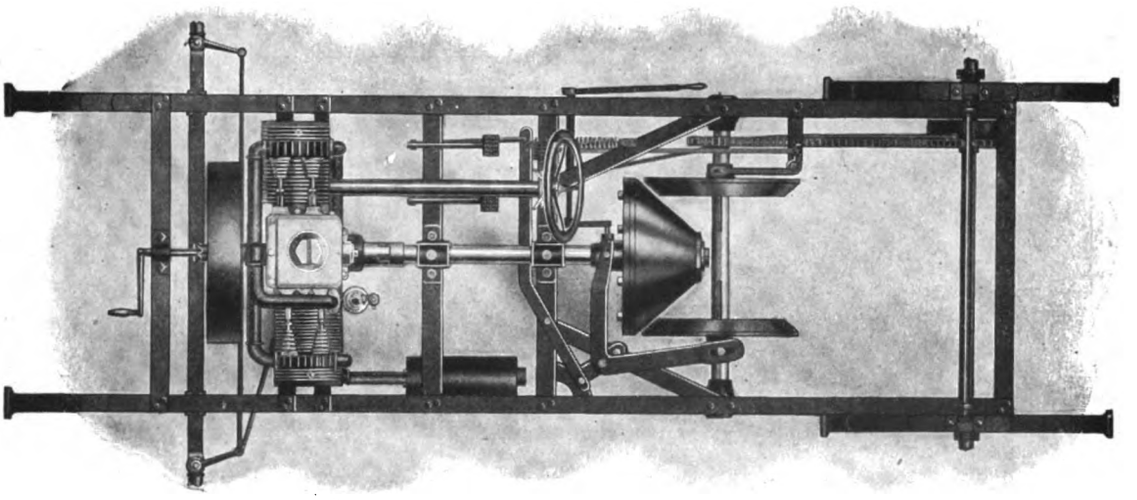
WORKING DRAWING OF LIMOUSINE MOTOR BODY.

Described on opposite page.

Digitized by Google

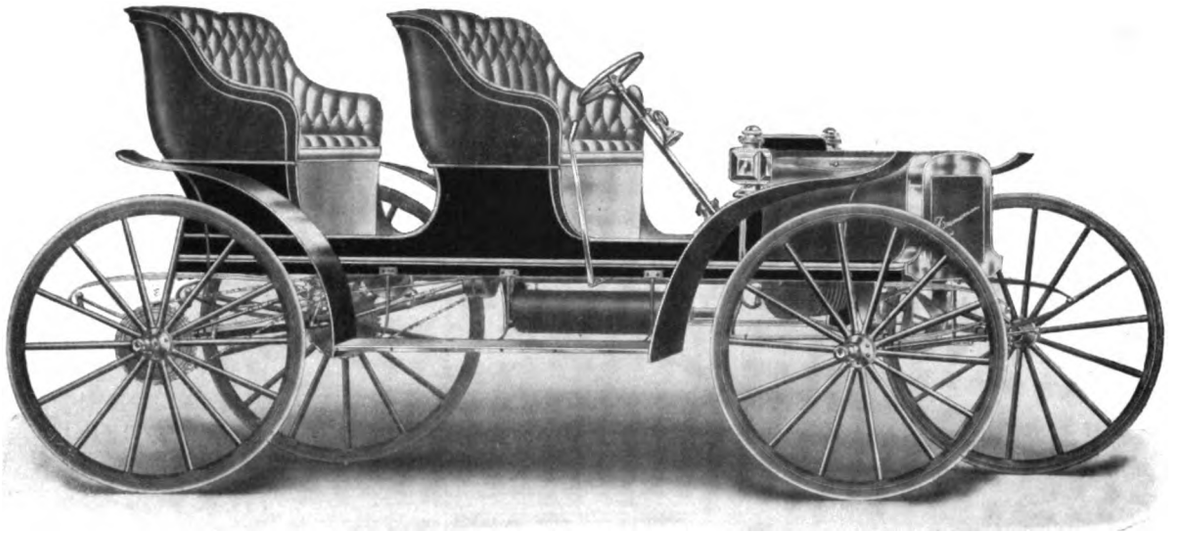


OPEN DELIVERY MOTOR WAGON.
Built by A. B. C. Motor Vehicle Mfg. Co., St. Louis, Mo.

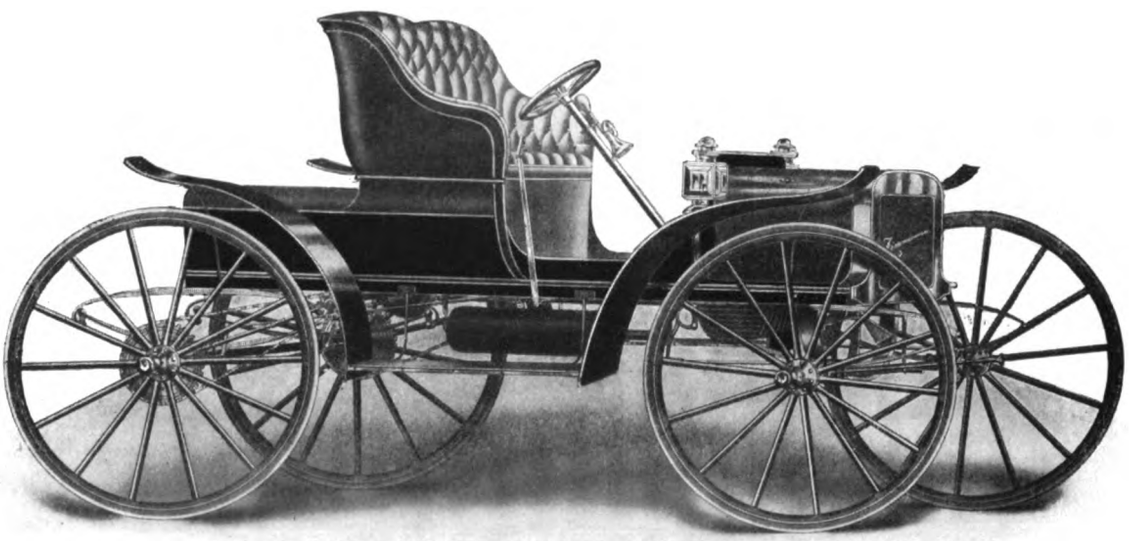


CHASSIS FOR WAGON SHOWN ABOVE.
Built by A. B. C. Motor Vehicle Mfg. Co., St. Louis, Mo.

Digitized by Google

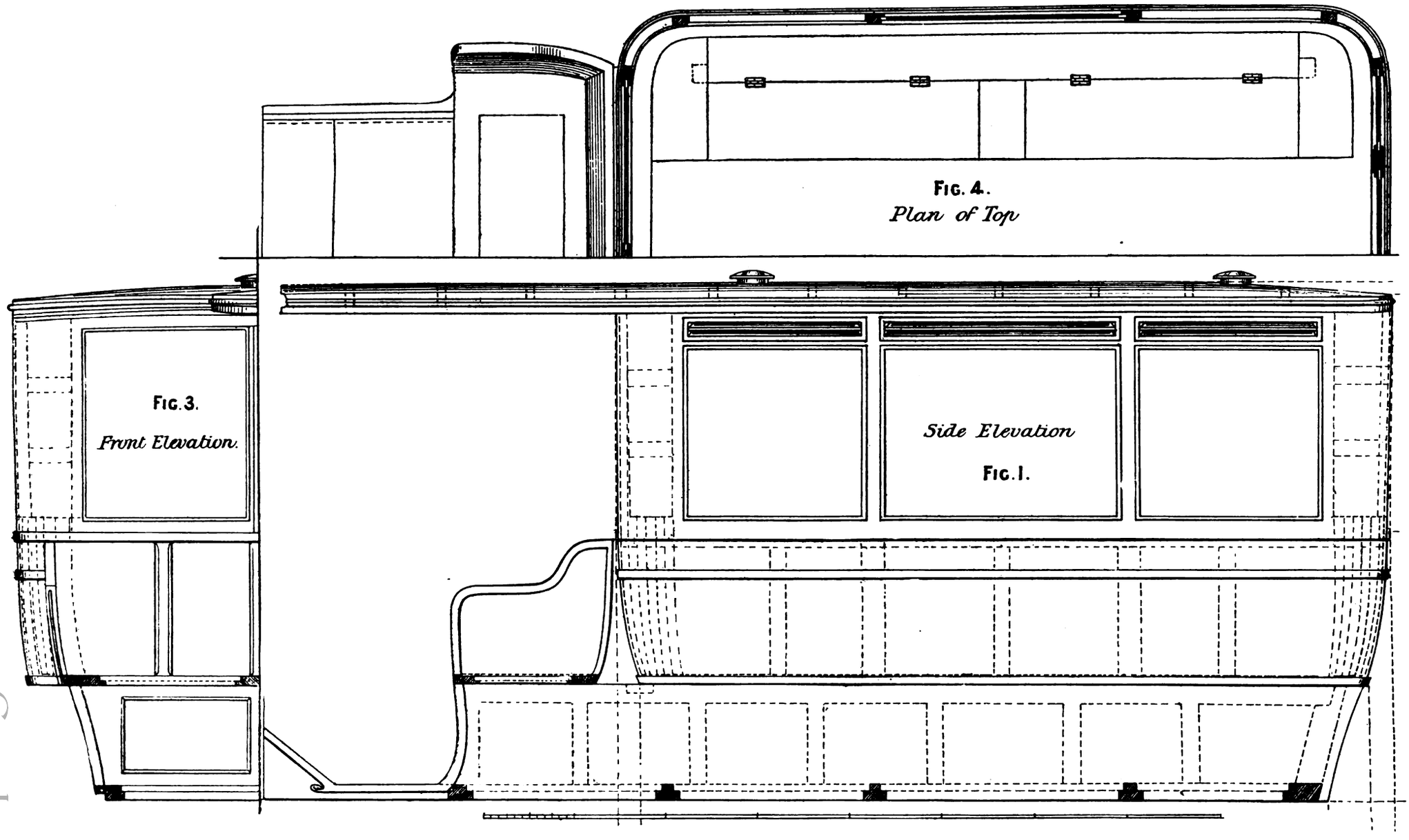


FOUR-PASSENGER CAR WITH SOLID TIRES.
Built by Zimmerman Mfg. Co., Auburn, Ind.



SOLID TIRE RUNABOUT.
Built by Zimmerman Mfg. Co., Auburn, Ind.

Digitized by Google



WORKING DRAWING OF COUNTRY-HOUSE OMNIBUS.

Described on opposite page.

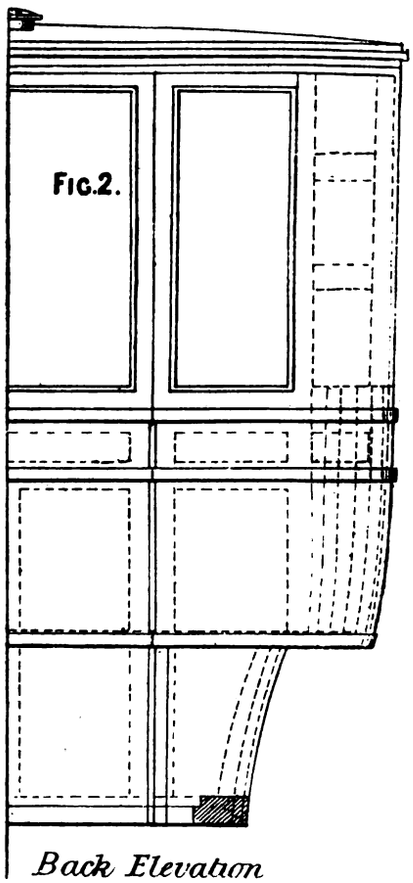
Digitized by Google

Body Construction and Finish

WORKING DRAWING FOR COUNTRY HOUSE OMNIBUS.

From Motor Car Manufacturers' Art Journal.

The drawing shown on opposite page is of a large 'bus suitable for country-house work, and is usually used for taking parties to and from the station, to the meets and shooting covers. It has accommodation for five passengers on each of the side seats, and if auxiliary seats, which can be fixed to the door and the front casing bar, are fitted, ample accommodation will be found for twelve passengers inside and two on the driving seat.



Back Elevation

The special features in this design are the round corners of laminated wood, the graceful O.G. curve of the door—all of which are produced without resorting to the use of metal panals—the ventilating of the roof and sides, and the arrangement of the windows in the front and back, and we are certain that this design will find favor with most of the country families, as we are sure that it supplies a much-felt want.

The bottom sides are cut from 2 in. ash and finished 1¾ in. by 3½ in., the hind bar is 4 in. wide, and the auxiliary bars 3 in.; they are all rabbeted to take the floor boards; the well or boot is swept outwards, therefore it is necessary that it should be framed.

The front corner pillar is 5 in. wide, the hind 3½ in. by 1⅛ in., the top rail 2⅛ in. by 1⅛ in., and this is carried from one end of the boot to the other.

The battens, of which there are six in number, are cut from 2¼ in. ash and finished 2 in. by 1 in.; these are lapped into the bottom side and top rail and well screwed. The panel is of ⅜-in. mahogany, and should be pinned on the edges and well blocked to the panels and canvas.

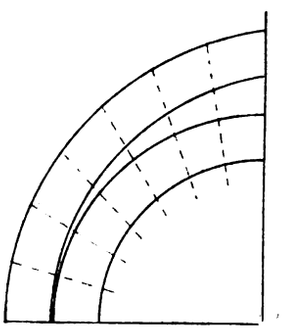
If the spaces in the seats are to be made into receptacles accessible from the top it would be necessary to frame the seats, and under those circumstances the back bar should be cut from 1½ in. ash and finished 1¼ in., the width being 7 in., the front bar 2 in. wide, the ends 7 in. wide, and the cross batten 6½ in. wide. All these should be rabbeted to take the loose seat boards; but if hinged lids are to be used there will be no necessity to put in the front seat bar, the seat rail being made 2½ in. by 1¼ in. The lift-up lids can be framed from ⅞-in. birch, or can be made in the solid from ¾-in. white wood and battened; the seat rail is framed into the door standing pillars and screwed to the front cross rail. Two battens, the width of the cross bars, are framed into the cross bars and seat rail, thereby strengthening the rail; but if solid seats are used their place can be taken by two small iron brackets.

The door standing pillars are cut from 3 in. ash, and are the full depth of the body, the bottom being lapped and screwed to the hind cross bar and the top frame into the top cross rail.

The cantrails should be cut from 2 in. ash and curved at the hind corners, so that the top cross bar, which is also curved, can be half-lapped to them, thereby making a strong corner to pin the corner panel to. The two side and front window pillars are cut from 3½ in. ash and finished 3 in.; these are framed into the cantrails and half-lapped and screwed to the seat from underneath. To put a strong bearing at the bottom of these pillars we should advise the builder to strengthen it by a corner plate.

The eight corner pillars which also form the pillars for the windows, should be cut from 2½ in. ash and finished 2 in., these should be half-lapped into the seat and framed into the cantrail.

The most particular parts of this body are the four corners, and the whole design depends upon the blending of the back and the side curves, and as we do not want to break the panel with unsightly vertical mouldings we propose making them of laminated wood. Of course the same effect can be produced by employing a metal worker to beat the panel, but from our experience it would not be satisfactory, the handling of 13 ft. by 22 in. of sheet metal is both difficult and costly, and it is almost



impossible to make a large panel like this free from some slight indentation, and, as all builders well know, after the body is varnished every slight imperfection in the panel becomes very apparent, therefore we give you a well tried method which will cost much less, will be more satisfactory and can be done without employing a metal worker, which in some cases means sending the frame some distance by rail.

Make a plain drawing of the corner, showing the shape required at the seat and waist lines; divide the top and bottom

Digitized by Google

into seven equal sections, and draw lines through the points the lines pass through seat line as sketch; this will give you the correct bevels of each piece of wood required to make up the corner, check out the corner of the seat to a depth of ½ in. by 1¼ in., then cut the number of sections you require to fill in the

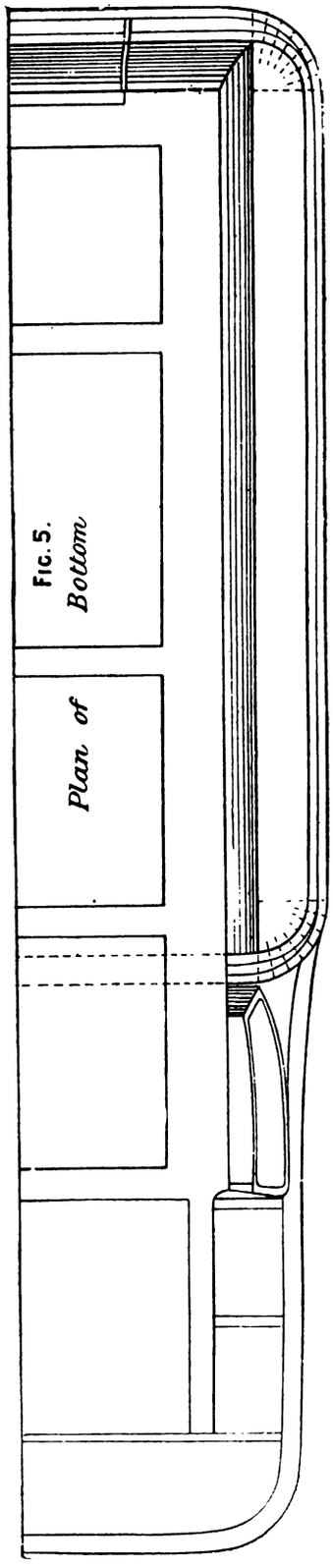


FIG. 5.

space from 2 in. dry mahogany, the bottom half of the pillar pattern being used as a pattern for these sections; these sections should be left large for cleaning off, fix up the corner pillars temporarily, and fit in the first section and screw this to the pillar with four or five screws, plane the edge to the section of the bevel of the corresponding section shown on the drawing. Do this alternately, screwing them to the section already fitted. Care should be taken to place the screws alternately and in such a position that the section is only fixed to its fellow section after the last section is fitted in; remove the pillar and screw the section in, re-fix the pillar and screw it to the section in the same manner that the sections have been fixed. After roughly cleaning off the outside, number each section and take them apart, gauge and clean off the inside of the sections, then fit one of the corner pillars for the last time, get some good glue and screw the first section to the pillar, gluing and screwing each section alternately; in fixing the last corner pillar glue and screw it to the last section so that they all become one solid block, leave the corners to dry as long as possible.

The waist rails are finished 1⅛ in. by 4½ in. and are lapped into the corner pillars. Two battens, 1 in. by ⅞ in., are fitted into the top corner pillars to carry the panels. These panels should be of well-seasoned mahogany and care should be taken in bending them, and, if possible, this should be done over a stove pipe 6 in. or 8 in. in diameter, so that they get a uniform heat. Pin these panels to the corner pillars and well block them to the battens. The lower panels are of mahogany and should be well fitted to the corner pieces. When finished the joints should be well glued and pinned with copper pins; if this is done and good glue used the joints will never show. Before cleaning off the panels be sure they are well blocked and canvassed and that the glue is thoroughly dry. Clean off the panels and fix on the mouldings, which are 1 in. by 5-16 in. The hoopsticks are 1⅛ in. by ⅞ in. and three-ply timber, covered with moleskin, may be used, but as the body is very long, we should advise the coach builder to joint it over the front rail to carry the dome ventilator. It will be necessary to fix in a piece of 6 in. by ⅞ in. white wood between the hoopsticks, the hole made and the ventilator fixed after the moleskin has been glued to the roof.

The front seat is framed. The sides are of bent wood and screwed to the filling—in piece which connects the front seat to the corner pillar. All the mouldings are pinned on this seat and a small bracket plate is fixed on the front to keep the sides from spreading. The hind door is framed up in the usual way, the standing pillars being strengthened with 1½ in. by 5-16 in. steel edge plate.

Side elevation.—Length of body set off on chassis, 11 ft. 7 in.; distance between dash and driver's seat, 2 ft. 1 in.; length of hind body on seat line, 7 ft. 11 in.; sail of hind body, 3 in.; depth of rockers, 1 ft. 3 in.; depth of hind body, 1 ft. 8 in.; depth from elbow line to roof line, 2 ft. 6½ in.; depth of front body in center, 1 ft. 1 in.; depth of front body at back, 1 ft. 7 in.; length of front body on seat line, 1 ft. 6½ in.; length of front body on elbow line, 1 ft. 9 in.

Front elevation.—Width across body at top, 4 ft. 4 in.; width across body at elbow line, 5 ft. 3½ in.; width across body on seat line, 5 ft. 1 in; width across rocker at top, 4 ft. 2 in.; width across rocker at bottom, 3 ft. 7 in.

Back elevation.—Width across body at top, 5 ft. 4 in.; width across body at elbow line, 5 ft. 3½ in.; width across body at bottom, 5 ft. 1 in.; width across rocker at top, 4 ft. 2 in.; width across rocker at bottom, 3 ft. 7 in.; width across widest part at roof line, 5 ft. 5 in.; width of door, 2 ft.; compass of roof, 1½ in.; length of extension canopy, 1 ft. 11 in.

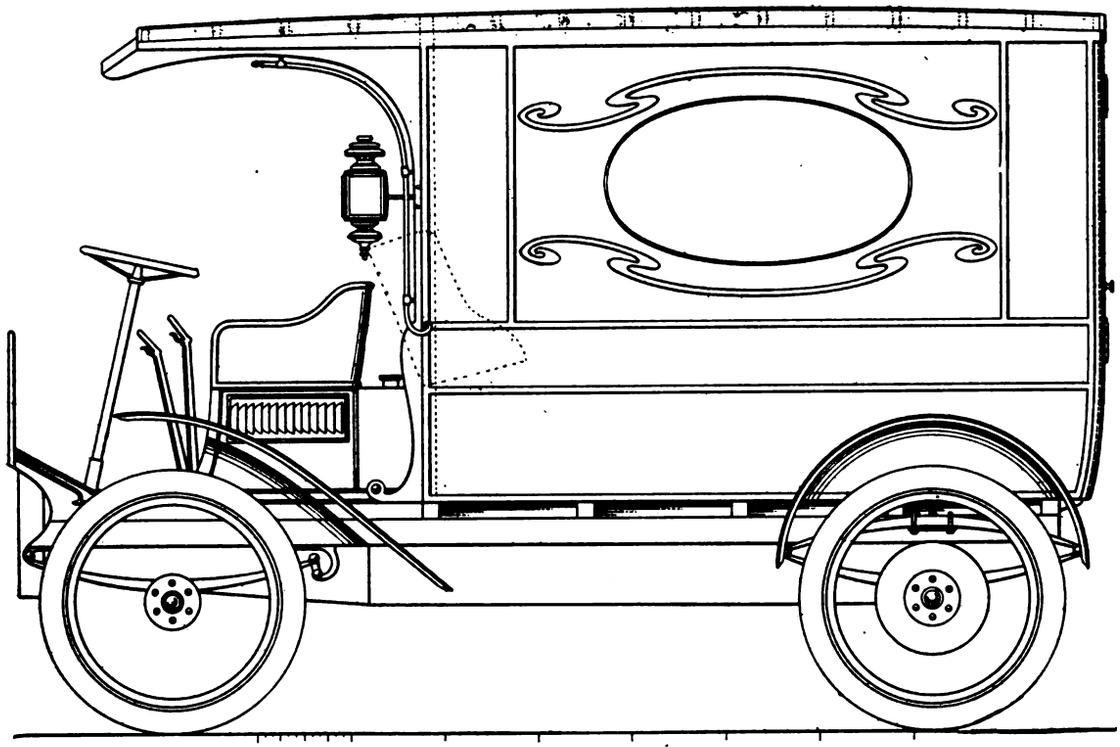
1910 WHITE STEAMERS WILL USE KEROSENE.

Official announcement is made by The White Company, of Cleveland, Ohio, to the effect that kerosene may be used as fuel on all 1910 models. This is made possible by the fitting of a special kerosene burner, the result of ten years' work on the part of the company. This new burner may be adjusted so as to burn gasoline also, if preferred, to the cheaper fuel. The use of kerosene as a fuel will relieve the fast growing scarcity of good gasoline and thus aid to clear up the fuel situation.

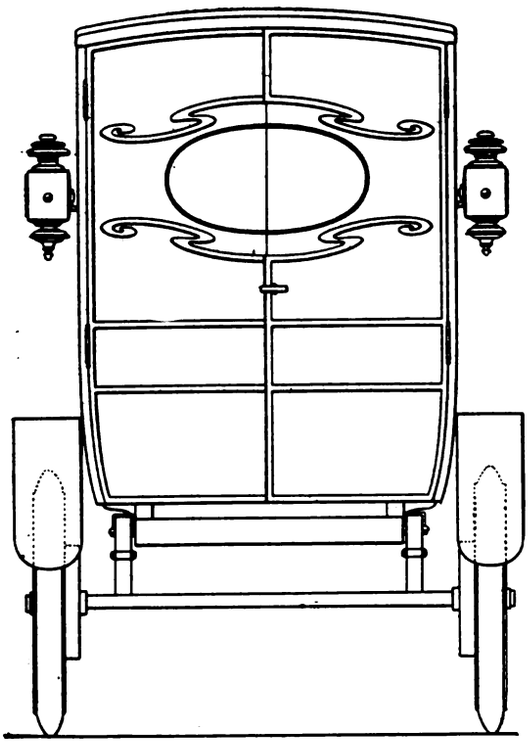
Digitized by Google

DESIGN OF BODY FOR COMMERCIAL MOTOR CAR.

The rapid strides being made in the development of the automobile for commercial uses is evident from the many motor driven delivery trucks and wagons observed in the streets of New York. Such cars are used for long distance out-of-town



express service, as well as for local delivery, and the driving mechanism ranges in price from a few hundred dollars to several thousand.



We illustrate here an original style of body mounted upon a chassis that is receiving marked patronage by several of the largest department stores.

The equipment of this chassis includes the seat and its riser, which is so constructed that the whole structure, with the heel-board, may be raised and thrown back, giving accessibility to the engine, which occupies the space underneath the seat. The three parts, the seat, seat riser and heel-board, are hinged together and work in unison. Provision must be made in building the body to permit the seat to throw back, as shown by dotted lines, by either leaving body open in front, furnishing doors, or providing a lid, hinged at top or bottom, that will allow the seat back to enter.

At the rear of seat the gasoline tank is located, and occupies a space of 8 in. and full width of chassis frame. It is at the rear of this tank where the body proper actually begins, and from which the body builder works.

In producing this design we endeavored to reduce the gap occupied by the gasoline tank, by extending the front corner pillars forward in an ornamental finish. These pillars extend forward 7 in. from front of body. Brass rails secured to hood of body and extending forward in graceful curves, and the lamp located where shown, both aid in bringing the seat and body close together, as is apparent.

The body, which rests 2 in. above chassis, on a frame composed of fine cross-bars and two bars running lengthwise, is made with ornamental upper side panels, the center of which have oval panels to be used for a picture or trade mark. Surrounding these ovals are fancy moldings, designed to embellish the panels. This same scheme is applied to the rear of body across both doors.

Body is of usual construction, special attention being necessary in framing upper panel to obtain a backing for nailing on moldings. The sides and back have 2 in. turnunder, and the corner post at the rear are rounded with moldings nailed over the joint of panel and pillar.

Inside body, space is 7 ft. by 3 ft. 9 in., with floor space 2 in. shorter and 4 in. narrower, because of the turnunder of sides and back. The height of body in the clear is 5 ft.

New Addition for Aluminum Body Work.—The O. J. Beaudette Body Co., of Pontiac, has begun the erection of a 50 x 50 three-story addition to its plant. The new structure will be devoted entirely to the manufacture of aluminum bodies for automobiles, at which one hundred men are already employed.

Digitized by Google

NEW COMBINATION TRUNK RACK AND FOLDING SEAT FOR TAXICABS.

Illustrated on this page.

A late device for use on taxicabs, and one which it would seem to us should meet with the approval and adoption by other owners and body builders, is presented on this page.

There are many taxicabs in use in the larger cities having the chauffeur's seat constructed to carry two persons, and an equal number with a single seat only for the driver, the remaining space being provided for carrying trunks or other luggage. The latter arrangement seems most plausible, as the patrons of such vehicles usually carry luggage of some kind, yet when it does occur that no baggage is to be carried, accommodations for a possible extra passenger is lost through having capacity for one person only on front seat.

The inventor of the device here illustrated had in mind a dual proposition, which could be utilized in any event as an extra seat or a trunk rack. In drawing this arrangement is shown in position for carrying a trunk, except that the extension rack, A A, is thrown up in Fig. 2, to show its construction and method of securing in place when raised. The latter is obtained by means of a spring snap bolt, shown at B, Fig. 2, which enters an eye forged to guard rail C at B, Fig. 1. This guard rail consists of three parts, C, D and cross rail E, Fig. 1, and protects the seat when folded from any possible injury. It is also shown in side elevation, at F, bent at the top and secured to the front opposite garnish rail.

The frame of extension rack, A, is made of single iron, to which the narrow strips of iron are riveted. Seat is 14 in. by 14 in. in dimensions, and folds between the two rails, C and D. A supporting rod is hinged at the front of seat and slides at its lower extremity, according to the movement of seat, in a slotted vertical iron, which is shown at G, Figs. 1 and 2. The rails indicated by H on the front and side elevations show their location and are intended to protect the seat and its riser.

The operation and value of the invention to a vehicle of this kind, for which it was designed, can be readily understood and appreciated by careful study of the drawing accompanying this description.

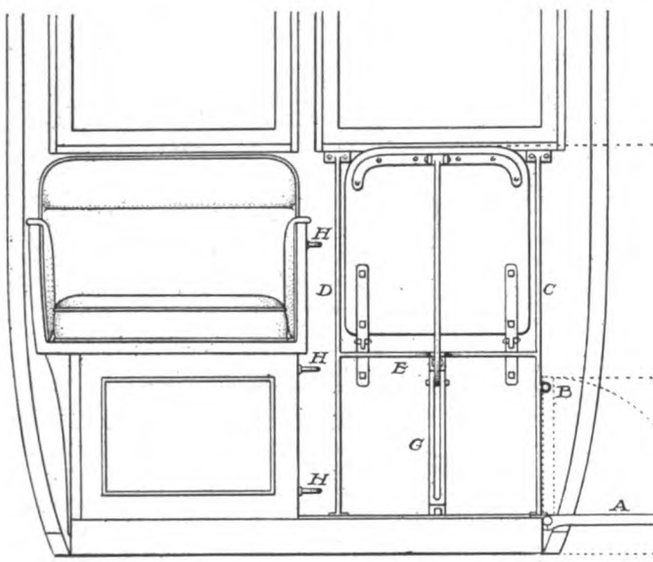


FIG. 1.

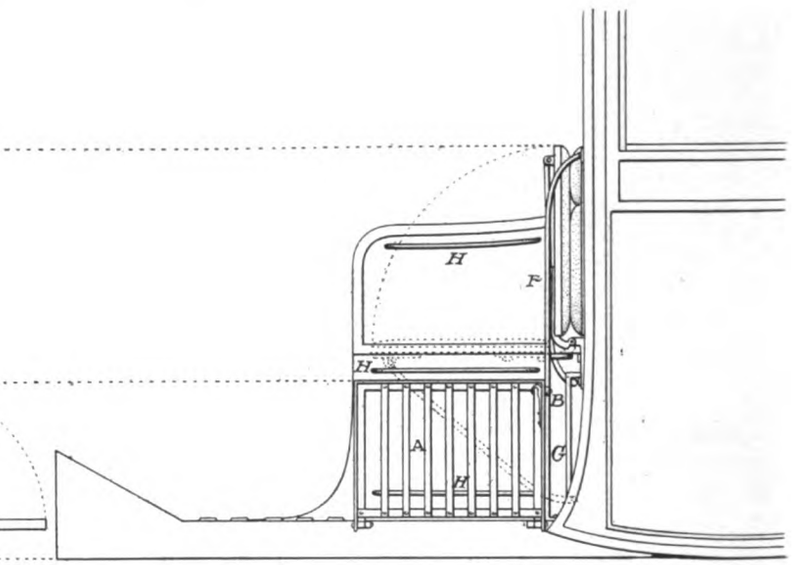


FIG. 2.

Very Busy.—The Continental Motor Co., of Muskegon, manufacturers of automobile motors, has added a third story to its factory and has orders enough in sight to keep the plant busy for a year. The company has purchased the blacksmith shop adjoining as an extension.

THE GOODRICH "WIRELESS" TIRE FOR MOTOR TRUCKS.

The new Goodrich "wireless" tire is meeting with such favor among manufacturers of motor trucks that the demand for them is already exceeding the ability of the huge Goodrich factroy to supply them. The reason for the success of the "wireless" is the fact that its construction affords certain advantages which are to be found only in this tire.

It consists of three integral factors: a special steel base with dove-tailed grooves on the top surface; a hard rubber sub-base, which is inseparably united with the steel base; and a soft rubber tread or tire proper, inseparably vulcanized upon the hard rubber sub-base. The tire is mounted on a special steel rim, or felloe band, which projects far enough on either side to protect the rubber from jamming against curbs, etc., in service. It is held in place on this band by means of lug bolts on either side of the steel base, and a key on the felloe band which fits into the key-seat on the inside of the steel base of the tire, thus preventing circumferential movement. The fastening point of the Goodrich "wireless" tire is steel to steel, and is, therefore, absolutely secure.

The advantages afforded by this construction are: first, increased mileage, because the tire will stand a maximum external abrasion without affecting its fastening to the wheel; second, freedom from repairs, because there is no hinging action of the rubber over internal metal fastenings, the cause of the breakdown of nearly every other type of truck tire; third, decreased cost per mile, as a result of the first two advantages. No complicated machinery is needed to apply the "wireless" tire. It may be quickly and easily put on to any wheel which has been properly equipped with the "wireless" rim.

The "wireless" dual type offers perhaps the most unique advantages. The improved construction makes it possible to set the twin tires on the rim in direct contact with each other. This reduces the space between the tires to the minimum necessary to prevent skidding and displacement of the rubber under stress. The narrower tread also reduces the necessity for offsetting the felloes on the drive side, and enables the load to be distributed centrally over the hub and spokes.

Full information regarding sizes, prices, discounts, guarantee, etc., may be obtained from the motor truck department, The B. F. Goodrich Company, Akron, Ohio.

Three things need not be labeled: a gentleman, a fool and a business man.

Digitized by Google

PREVAILING FORMS OF FOLDING TOPS FOR TAXICABS.

Illustrations accompanying.

We present in this article three distinct methods of folding the leather landaulet style of top, which has been applied to the taxicab in some form or other, and is considered part and parcel thereof. The continuous vibration of the automobile when in

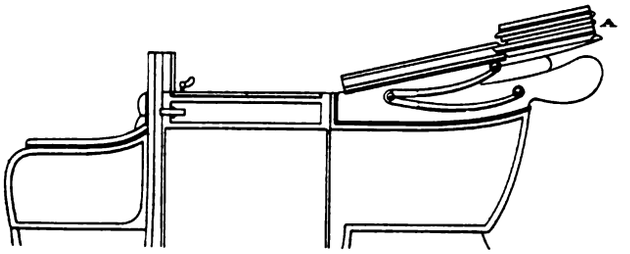


FIG. 1.

motion has developed constructional weaknesses which to be overcome has been the means of producing another form, which is now held in preference by taxicab owners and builders.

Fig. 1 illustrates a style occasionally seen on our streets. It is a copy of the top used by carriage builders for many years in building the landaulet. Here the entire structure is lowered, permitting a clear view ahead. The upper half of coupe pillars

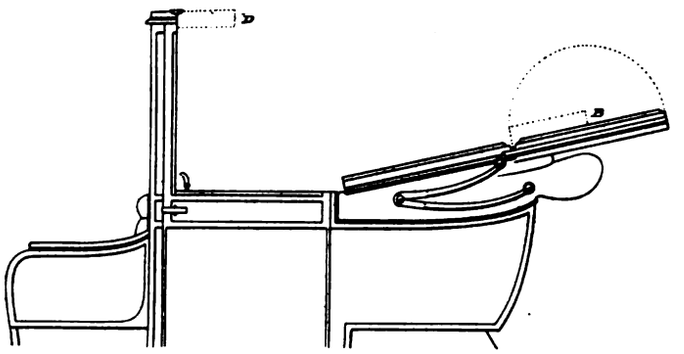


FIG. 2.

fold across the body after the front glass frame is dropped and flappers are used in doors. Section of roof over the door is jointed at the center and folds, in the manner shown in Fig. 1 at A. This particular style of top is not very popular, owing to the necessity of having a wind shield, except probably among users of private motor cars. One that has taken its place is

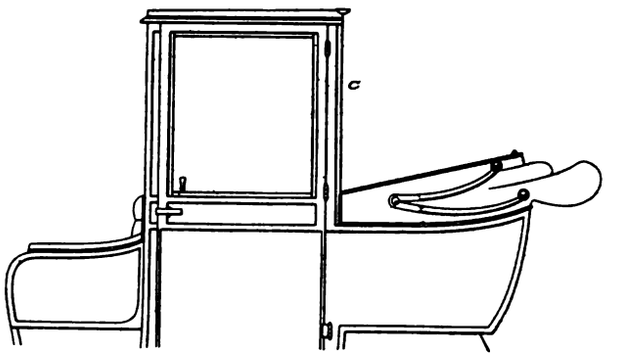


FIG. 3.

illustrated in Fig. 2, but this, too, is fast being displaced by something more substantial, which is better able to stand the strain expected of a taxicab.

In Fig. 2 the coupe pillars remain whole, or, in other words, are not disjointed as in Fig. 1; consequently when the glass frame is raised a perfect wind shield is acquired, an accessory most desirable to the occupants of a cab. However, the long section of roof extending back of body, although serving as a protection against the dust arising from the rear, will in due course of time become loose and rattling and finally break entirely. Even when the roof is jointed, at B, and half of it thrown to the front, as shown by dotted lines, the same destructive vibration will soon accomplish its inevitable result.

In endeavoring to overcome the difficulties above referred to, another form, presented in Fig. 3, has developed, and is now being adopted by lately organized taxicab companies as well as builders of such bodies. It will be observed by this illustration that the entire frame work about the door is left standing, the leather top folding back from the standing pillar C, thus dispensing with the great overhang of roof and overcoming the resulting destruction to the hinges and other fittings of the top and at the same time presenting a vehicle that is more quiet to its occupants when scurrying from one place to another.

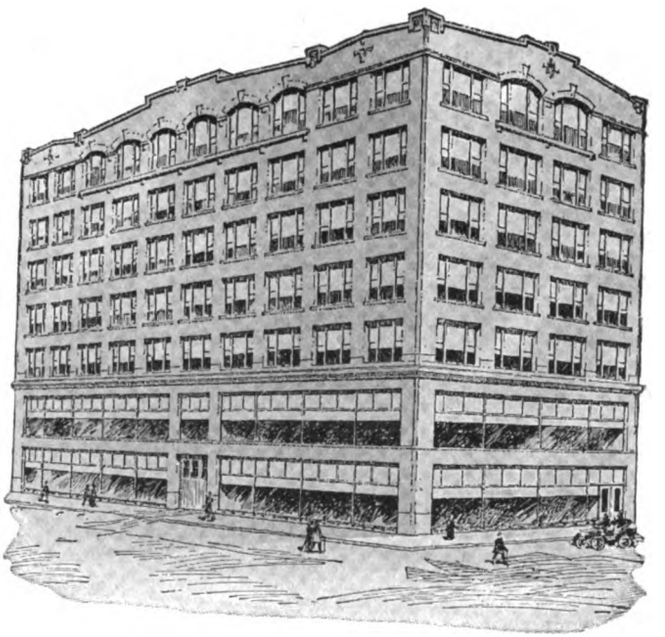
Very often builders construct the body leaving a section of the roof-rail stand, as shown by dotted lines at D, in Fig. 2, a custom which, it would seem, would result in many sore heads and ruined head gears from coming in contact therewith unawares.

"RIGHT IN THE MIDDLE OF GASOLINE ROW."

The Studebaker Company is erecting at the corner of Michigan avenue and Twenty-first street, Chicago, what will undoubtedly be one of the most elaborate and finely equipped automobile salesrooms and garages in this country.

The building will be of solid concrete, seven stories in height, with a frontage on Michigan avenue of 75 feet and 175 feet on Twenty-first street.

It is expected that the building will be ready for occupancy about January 1, 1910, and as soon as completed the automobile



department of the Studebaker Company, now located with the carriage repository on Wabash avenue, will take possession of the entire building.

This is another move by the Studebaker Company that serves to indicate the commanding position to which they have so rapidly advanced in the automobile field. With the Studebaker-Garford plant at Elyria, turning out 1,500 high grade cars a year, the Studebaker E.-M.-F. plant in Detroit delivering 1,000 medium priced cars every month, with the South Bend factory turning out over 1,000 electric pleasure and commercial cars yearly, and with their chain of splendidly located and long established branch houses situated in all important centers, the house of Studebaker soon bids fair to occupy the same relative position in the field of self-propelled vehicles that for many years they have held in the field of horse-drawn vehicles.

Digitized by Google

FOLDING SEAT FOR AUTOMOBILE.

A new and more comfortable folding automobile chair has just been placed on the market by the McKinnon Dash Company, of Buffalo, N. Y., and is illustrated herewith. This seat is so constructed that it can be used either with the back placed upright or folded down. The frame is made of round steel, either japanned, oxydized or brass plated, and is very durable

and will not rust. It is trimmed in brown duck or art leather and the back and seat are padded.

These chairs contain many practical features, such as folding up sufficiently small to be carried under the rear seat and are upholstered with waterproof material, and are finished good enough to be used in the highest grade automobile.

This chair is something which should be of interest to all automobile dealers and dealers in automobile parts. Write for particulars and price list.

PALACE SHOW TO OPEN NEW YEAR'S EVE.

Opening the Grand Central Palace Show of the American Motor Car Manufacturers' Association on New Year's Eve proved so successful last winter that the show committee, of which R. E. Olds is chairman, has decided definitely on that date as the time for the opening of the "Decennial Show" of 1910. There will be the usual private view in the afternoon of Friday, December 31, 1909, with the formal opening at 8 o'clock on New Year's Eve, after which the show will continue until the following Friday night.

There will be some changes in Grand Central Palace which are expected to supply additional space to care for those exhibitors who could not be provided for at the ninth affair, and it is believed that the Tenth International, or what will be known as "The Decennial Show," will surpass in attendance and sales even the record-breaking affair of last winter.

TO PUSH SPRING WHEEL.

William Metzger, who recently sold his interest in the E-M-F Company, has become identified with the Seaton spring wheel. As to the extent of his connection with the company nothing has yet been definitely announced, but it is understood that he will give considerable of his time to what will be known as the American Spring Wheel Company, the foreign patents of which will be handled by the International Spring Wheel Company. H. L. Olmstead has accepted the position of engineer for the American company.

MOTOR VEHICLES IN GERMANY.

On January 1, 1909, 41,727 motor vehicles were counted in Germany, of which 39,475, or 94.6 per cent., were for the transportation of persons and 2,252, or 5.4 per cent., for that of freight. Of the former, 20,928 were motor cycles, of the latter only 248. Compared with the preceding year, the increase of motor vehciles was 5,705, of which 5,231 were for passengers and 474 for freight.

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, five cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

HELP WANTED.

Wanted—Carriage trimmer; first-class workman. Address Horace Ervein, Ogontz, Pa.

Wanted—300 mechanics. Wood and metal workers, painters, and trimmers. Large automobile factory. Must fill buildings just completed. Write Racine Mfg. Co., Racine, Wis.

Wanted—Machine room foreman in large automobile factory. Must be capable of taking head foremanship. Excellent opportunity for the right man. Address "H. M. A.," care The Hub, 24 Murray street, New York City.

Wanted—A progressive, industrious, young or middle aged man, experienced in building light high grade vehicles, to take charge of factory. Must be a man of advanced ideas and good designer, systematic, good organizer, one that can produce high grade work at lowest cost. Great opportunity for the right man. Address "E. M. H.," care The Hub, 24 Murray street, New York, N. Y.

SITUATIONS WANTED.

Wanted—Designer and draftsman, practical body maker, eastern man with broad experience on fine carriages and automobile work, at present in charge of an Ohio body concern, desires position as draftsman, foreman or superintendent, after September 1. Address "J. C. H.," care The Hub, 24 Murray street, New York City.

Wanted—Position as foreman painter, or assistant superintendent, by young man with modern factory experience. Address "Z," care The Hub, 24 Murray street, New York City.

Wanted—Position by experienced foreman trimmer with a carriage or automobile factory or supply company. Able to handle men and get work out properly. Can give reference as to character and ability. Address "W. E.," care The Hub, 24 Murray street, New York City.

Wanted—Situation by all around carriage trimmer with over thirty years' experience in all styles of carriage and automobile trimming. Small shop preferred. Location no object. Address "R. J.," care The Hub, 24 Murray street, New York City.

Wanted—Position as superintendent in large carriage factory, as my experience in the past has been as such. Have been superintendent for a number of years, and am a practical man. Am a hustler and an organizer of men, and can get out work at a low cost. Address "W. W.," care The Hub, 24 Murray street, New York City.

Wanted—Position as superintendent. Twenty years experience in number of factories as mechanic foreman, superintendent and factory manager. Am in the race for producing and economy. Strictly sober and with good reference. Address "Superintendent," care The Hub, 24 Murray street, New York City.

Wanted—Position by a clean-cut young man of 33 and of good habits as salesman for a good reliable carriage or buggy company. Is a practical man; has risen to foreman in blacksmith department; has been on the road some, but found it would be a great benefit to learn the trade and know the points of a job to be successful, and am now open for a position. Reference to character and ability if required. Address Box 974, care The Hub, 24 Murray street, New York, N. Y.

PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 608 F street, Washington, D. C. Established 1883. I make an investigation and report if a patent can be secured and the exact cost. Send for full information. Trade-marks registered.

Digitized by Google

Are You Now Building Motor Buggies?
Do You Contemplate Building Them?
If You Do What Axles Are You Thinking About Using?

We will be very glad to give you good
and valid reasons why you should use

TIMKEN ROLLER BEARING AXLES

Rear View.

Square Dead Rear View.

Apart from the fact that all the successful builders of Motor Buggies are using them---there is one other strong argument contained in four words---There are none better. But the experience of others is worth while profiting by sometimes.

Note the names of those using them

Holsman Automobile Co. Columbus Buggy Co.
Reliable Dayton Motor Car Co. Schacht Manufacturing Co.
W. H. McIntyre Co.

And then write us if you would have additional information, or else facts covering your own particular case.

TIMKEN ROLLER BEARING AXLES are Guaranteed for Two Years

The Timken Roller Bearing Axle Co.

CANTON, OHIO

BRANCHES: 10 E. 31st STREET, NEW YORK
429 WABASH AVENUE, CHICAGO

Please mention "The Hub" when you write.

Digitized by Google

A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

H.K.PORTER BOLT CLIPPERS
27 YEARS 27 YEARS
EVERETT, MASS., U.S.A.

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

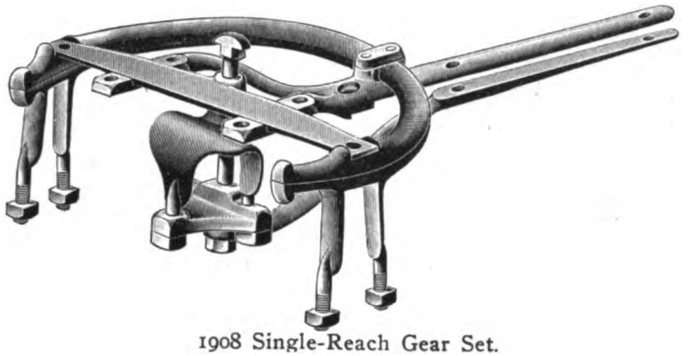
Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.
745 THIRD AVE., BROOKLYN, N. Y.

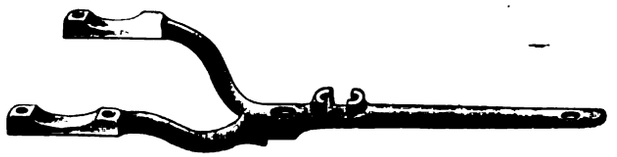
INDEX TO ADVERTISEMENTS.

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.



Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

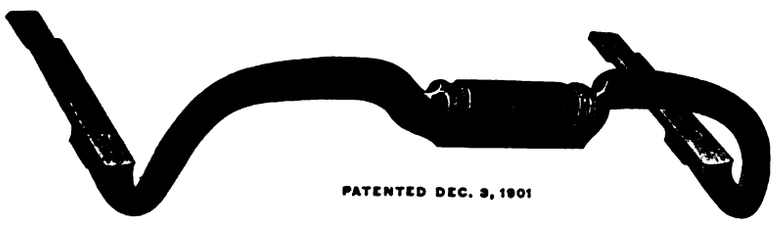
JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



PATENTED DEC. 3, 1901

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland, Pa.

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Please mention "The Hub" when you write.

Digitized by Google

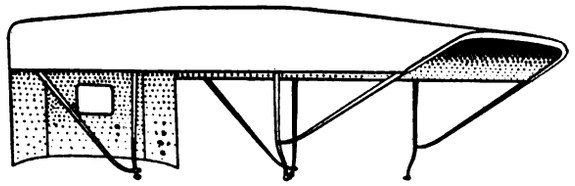
TOPS and Upholstering

FOR

AUTOMOBILES

AND

HORSE VEHICLES



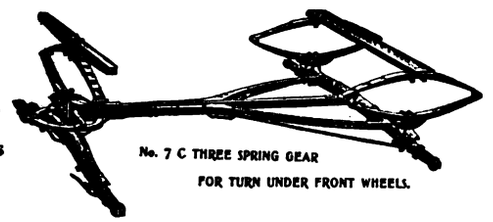
MANUFACTURED BY

Ball Buggy Top Co.

YORK, PENNSYLVANIA

THE OLD RELIABLE AND ONLY SCHUBERT BROS. GEAR CO.

50 Other Styles



No. 7 C THREE SPRING GEAR
FOR TURN UNDER FRONT WHEELS.

Always address us this way if you wish any of our specialties. Work-in-the-White Bodies, Seats and Gears for Carriages and Automobiles. Special work in bodies promptly attended to. Let us figure with you. **Would you like our Catalogue?**

SCHUBERT BROS. GEAR CO., Oneida, N. Y.

Quick-Wear-Out Tires Do Not Pay

Putting tires made of worn-out rubber on vehicles doesn't help the buyer and doesn't help the seller. Goodyear Wing Tires are just as good as pure *new* rubber, and the Goodyear "Wing" construction can make them.

GOODYEAR

WING CARRIAGE TIRES

are made of the highest grade gum, fresh from the rubber trees—lively and durable. It is quoted on the market at $1.30 per pound today. We *could* buy "Lapori" or "Guayule" rubber at 35 cents a pound, or even old reclaimed rubber at 10 cents per pound, but it won't do for a Goodyear. Notice the Goodyear Wings. They keep out all dust, grit, mud and water, which gets in under the ordinary solid tire and wears it away. Write today for booklet showing how Goodyear's are built. Ask for sample section.

The Goodyear Tire & Rubber Co., Canal St., Akron, O.

Boston, New York City, Milwaukee, Pittsburg, Louisville, Denver, Cincinnati, San Francisco, St. Louis, Omaha, New Orleans, Baltimore, Los Angeles, Chicago, Buffalo, Washington, Memphis, Kansas City, Philadelphia, Cleveland, Detroit, Atlanta, Dallas, St. Joseph, Indianapolis

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.
Dalzell Axle Co., South Egremont, Mass.
Timken Roller Bearing Axle Co., Canton, Ohio.

Bodies, Seats, Etc.
Woodman, Joel H., Hoboken, New Jersy.

Bodies in the White.
Miller Bros., Amesbury, Mass.
Schubert Bros. Gear Co., Oneida, N. Y.

Bolts and Nuts.
Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.
Wiese & Co., Wm., New York City.

Carriage Forgings.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.
Gifford & Son, John A., New York.

Carriage Goods.
English & Mersick Co., New Haven, Conn.
Fairfield Rubber Co., Fairfield, Conn.
Gifford & Son, John A., New York.

Dashes, Fenders, Rails, Etc.
McKinnon Dash Co., Buffalo, N. Y.

Fifth Wheels.
American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Finished Vehicles.
Studebaker Bros. Mfg. Co., South Bend, Ind.

Hubs.
American Wood Block Co., The, Delphos, Ohio.
Koller & Co., J. B., Mechanicsburg, Pa.

Jacks.
Hankinson, J. V., Franklin, O.

Lamps.
Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Machinery and Tools.
Barnes Co., W. F. & John, Rockford, Ill.
Bentel & Margedant Co., Hamilton, Ohio.
Porter, H. K., Everett, Mass.
West Tire Setter Co., Rochester, N. Y.

Miscellaneous.
Standard Oil Cloth Co., New York.

Ornaments.
Palm, Fechteler & Co., New York, N. Y.

Rubber Tires.
Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Kokomo Rubber Co., Kokomo, Ind.
Stein Double Cushion Tire Co., Akron, O.

Shaft Couplings and Anti-Rattlers.
Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Metal Stamping Co., New York City.

Springs and Gears.
Fitch Gear Co., Rome, N. Y.
Indianapolis Bolster Spring Co., Indianapolis, Ind.
National Spring and Wire Co., Albion, Mich.
Schubert Bros. Gear Co., Oneida, N. Y.
Spring Perch Co., Bridgeport, Conn.

Spokes.
Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.
Koller & Co., J. B., Mechanicsburg, Pa.

Trimming Materials.
Stevens & Sackett Co., New Haven, Conn.

Varnishes, Paints and Japans.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Masury & Son, John W., New York and Chicago.
Pierce Co., F. O., N. Y. City.
Smith & Co., Edw., N. Y. City.
Standard Varnish Works, New York City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

White Lead.
Eagle White Lead Co., Cincinnati, Ohio.

Wheels.
Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.

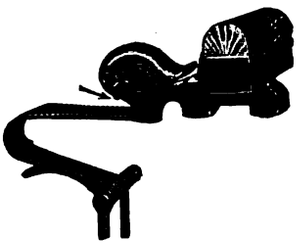
Wheel Stock, Bent Wood, Etc.
Crane & MacMahon, New York.
Koller & Co., J. B., Mechanicsburg, Pa.
Tucker Wood Work Co., Sidney, Ohio.

Digitized by Google

Eccles Ball Bearing Couplings

ALL OUR COUPLINGS ARE SHIPPED OUT WITH TWO PIECE BUSHINGS, FASTENED IN THE COUPLINGS

WHEN BUSHINGS ARE WORN OUT BY LONG USE, THEY CAN BE INSTANTLY REPLACED AND FASTENED INTO THE SOCKET BY OUR SPECIAL PROCESS



Patented Nov. 25, 1902.
Patented June 11, 1907.

THE SPRING IS PIVOTED AT THE FRONT SO THAT IT CAN BE TURNED OUT OF THE WAY OF THE WRENCH WHILE CLIPPING COUPLING TO THE AXLE.

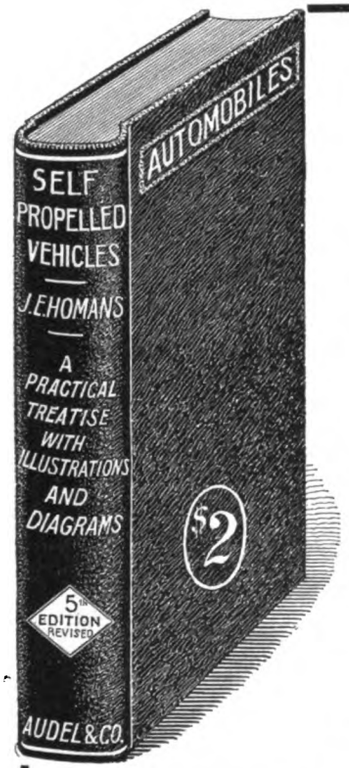
No Lost Bushings when you Use Our Couplings

We Make a Full Line of Carriage and Wagon Forgings

RICHARD ECCLES COMPANY

Catalogue No. 15 is our latest

AUBURN, NEW YORK



"Self-Propelled Vehicles"

Fifth Edition, Revised.

A practical treatise on the theory, construction, operation, care and management of all kinds of Automobiles.

By

JAMES E. HOMANS, A.M.

Contains 608 pages and upwards of 500 illustrations and diagrams, giving the essential details of construction and many important points on the successful operation of the various types of motor carriages driven by steam, gasoline and electricity.

This work is now the accepted standard, explaining the principles of construction and operation in a clear and helpful way. This book will be sent postpaid to any address in the United States, Mexico or Canada upon receipt of $2.00.

Address

TRADE NEWS PUBLISHING COMPANY

24 Murray Street, New York

J. B. Koller & Company

Manufacturers of all kinds and sizes of

Finished Spokes and Bent Rims

Also all kinds of

SLEIGH, SLED AND BOB SLED RUNNERS

MECHANICSBURG, PA.

MILLER BROTHERS

Builders of

CARRIAGES

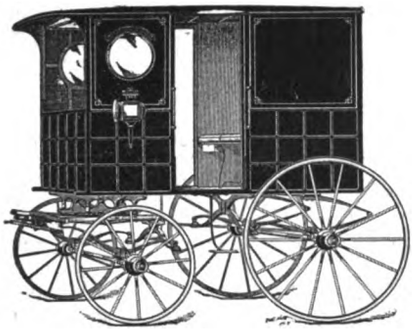
IN THE WHITE

AND

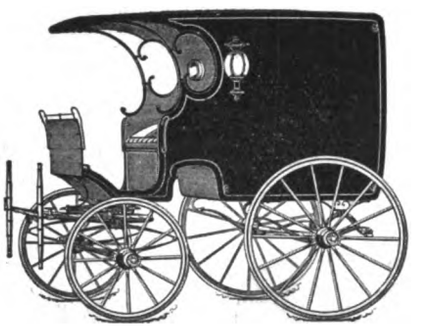
Automobile Bodies

AMESBURY, MASS.

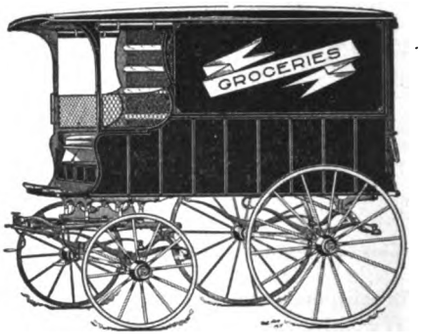
Digitized by Google



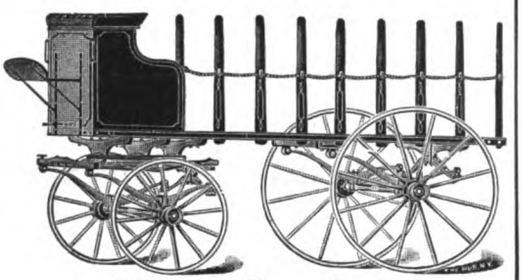
No. 112.—Milk Wagon.



No. 111.—Altman Wagon.



No. 113.—Grocery Wagon.



No. 122.—Flour Truck.

Electrotypes

of the vehicles presented on this page will be forwarded on receipt of

75 cts.

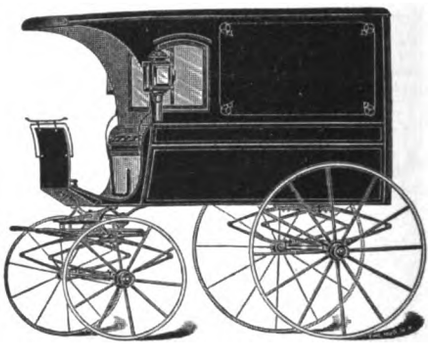
for each cut, to any address. Postage prepaid.

Catalogue

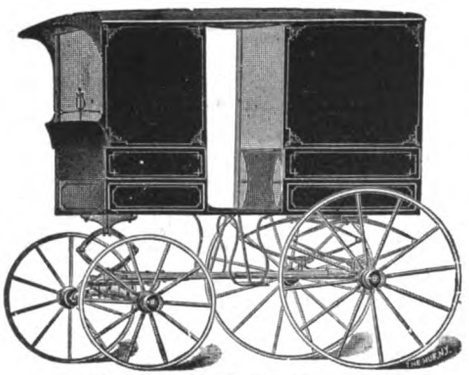
containing nearly 200 illustrations of carriages, wagons, sleighs, and miscellaneous cuts will be sent upon application.

Trade News Publishing Co.

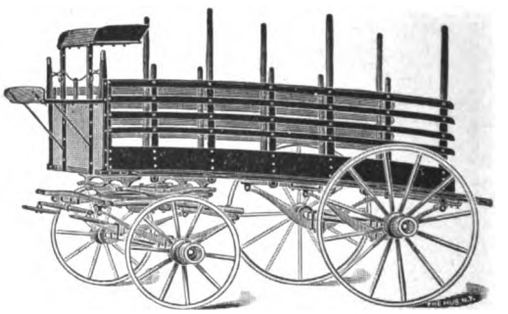
24-26 MURRAY ST.
NEW YORK



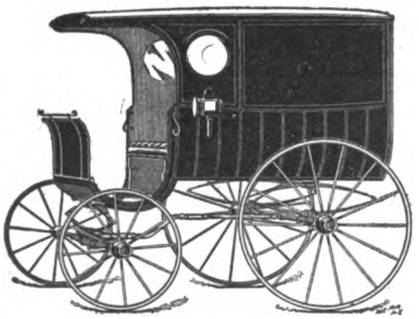
No. 115.—Delivery Wagon.



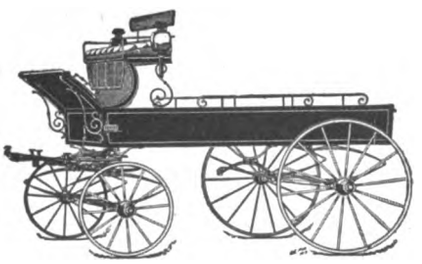
No. 116.—Milk Wagon.



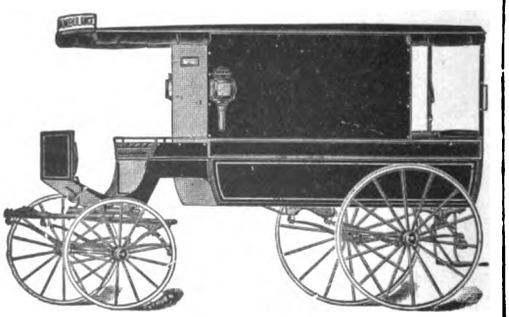
No. 117.—Merchandise Truck.



No. 114.—Delivery Wagon.



No. 124.—Delivery Wagon.



No. 118.—Ambulance.

Digitized by Google

WM. WIESE
With Hardt, Von Bernuth & Co.
Since 1883.

WM. WIESE & CO.

ALBERT MAERTENS
With Hardt, Von Bernuth & Co.
Since 1894.

Formerly Carriage Goods Department of HARDT, VON BERNUTH & CO.

Carriage and Automobile Linings and Livery Cloths

Sole Agents in the United States for
WULFING'S CARRIAGE CLOTH AND EL DE BARAN GOATSKIN

66-68 Greene St., New York

Enameled Oil Cloth that can't crack or blister—that's MERITAS.

Nothing on the market can give your customers such good service and satisfaction.

Look on the back of the goods for our trade-mark guarantee.

At your jobbers.

Standard Oil Cloth Co.
320 Broadway New York

HEADQUARTERS FOR CARRIAGE BUILDERS.

Let us offer you the most delightful hotel accommodation at moderate cost.

HOTEL EMPIRE

B'way 63d St.

NEW YORK CITY

In the centre of everything worth while.

Restaurant noted for its excellent cooking, efficient service and moderate prices

Rooms (use of bath)..$1.50
Rooms (with bath)... 2.00
Suites (with bath).... 3.50

FIVE MINUTES WALK TO SHOPPING AND AMUSEMENT CENTRES

All Street Cars—One Minute to "L" and Subway

Send for Guide of New York, Free

W. JOHNSON QUINN, Prop.

Our Carriage or Spring Edge Cushion Frame

Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

For Weak or Overloaded Springs.

VICTOR STEEL SPRING BUFFERS

Save wagon, prevent breakdowns, and add materially to the carrying capacity. If your dealer does not have them write to us direct.

Made in Four Sizes: 0, 1 1-4 in. spring & under; 1, 1-4 in. to 1 1-2 in. spring; 2, 1 1-2 in to 2 in. spring; 3, 2 in. to 2 in. spring.

Carrying capacity of each spring: No. 0, 400 lbs.; 1, 750 lbs.; 2, 1000 lbs.; 3, 1250 lbs.

Manuf'd by INDIANAPOLIS BOLSTER SPRING CO.
INDIANAPOLIS, INDIANA.

CARRIAGE STRAPS

All kinds of strap work for carriage builders. Our capacity for work of this kind is practically unlimited. For quality and price we beat the world. Send sample and let us quote prices. -:- -:-

J. C. DECKER - - - - Montgomery Penna.

Please mention "The Hub" when you write.

Digitized by Google

The Fairfield Rubber Co.

Manufacturers of Carriage Cloth, Imitation Leather, etc. For Automobiles and Carriages

Fairfield - - - Connecticut

ESTABLISHED 1886.

Correspondence School of Carriage and Motor Carriage Drafting

A thorough, practical tuition is given through this correspondence school. The theory and practice of construction, bookkeeping, perspective. Many men now hold good positions through taking the courses of instruction.

Principal, THOS. MATTISON,
Hillside Avenue, Bitterne Park,
Southampton, England.

Author of "The Coach Body Makers' Guide," $3.00; a practical treatise on "The Suspension of Carriages," "Bookkeeping," and other carriage building works.

The most power to the weight car of any of this type now on the market.

SIMPLE, DURABLE AND RELIABLE

Four years of success. Write for catalog and prices

THE BUGGYCAR CO.

ARMORY AND JOHN STREETS

CINCINNATI :: :: :: :: OHIO

American Harness and Saddlery Directory

FOR 1909 IS NOW ON SALE

It is the most accurate and complete edition that has been published

Trade News Publishing Company

24-26 Murray St., New York

THE list of the **WHOLESALE** and **JOBBING TRADE** is so arranged as to make it convenient to separate the association members from those not so recognized.

The **RETAIL HARNESS MAKERS** of the United States and Canada comprise the principal part of the Directory, arranged by State, Town and County, and in the large cities, the street and number is given. Those rating (approximately) over $1,000 are marked.

A list of **HARNESS DEALERS** as distinguished from retail harness manufacturers, is also given. The value of this list to those who solicit the vehicle, implement, hardware and department stores will be readily appreciated.

THE BUYER'S GUIDE is a valuable as well as unique feature. It contains an alphabetical classification of all the many and various articles made to sell to the trade, and the names of those making the various articles.

A list is also published of Export Commission Merchants, giving the class of merchandise they handle.

THE PRICE OF THE DIRECTORY IS $4.00, PAYABLE IN ADVANCE.

Please mention "The Hub" when you write.

Digitized by Google

THE BRADLEY SHAFT COUPLING

OPEN

Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

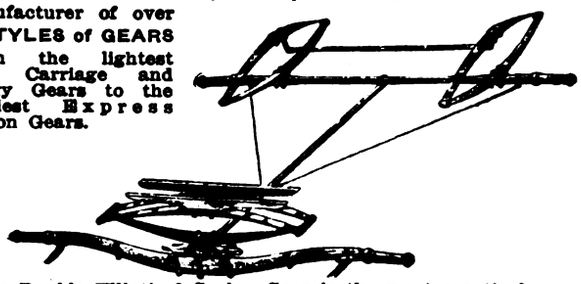
C. C. BRADLEY & SON, Syracuse, N. Y.

CLOSED

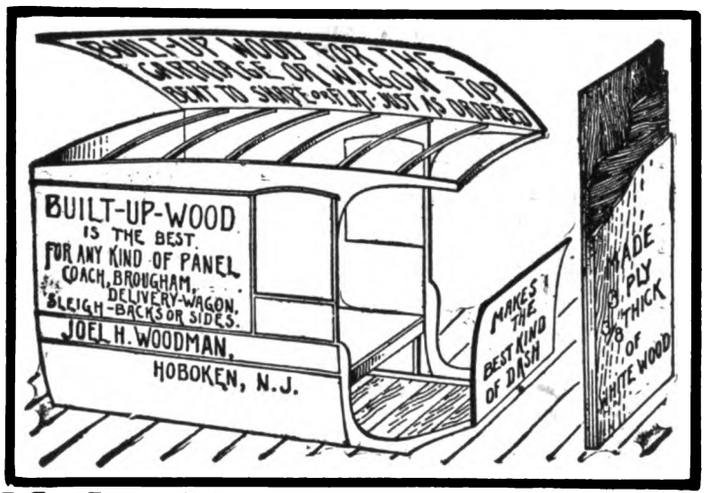
FITCH GEAR COMPANY

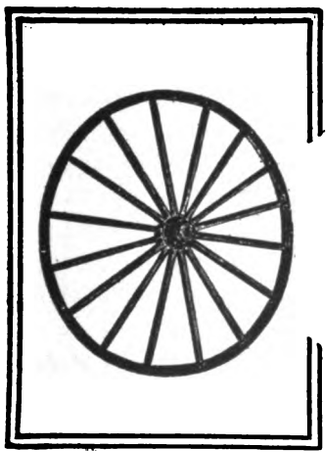
ROME, N. Y., U. S. A.

Manufacturer of over **40 STYLES of GEARS** From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.



The Double Elliptic 3-Spring Gear is the most practical combination business and pleasure gear on the market, and is equipped with Wrought or our Common Sense Short Turn Fifth Wheel. Send for our No. 24 Catalogue.





Time Has Told the Story!

Service and satisfaction always follow our rolling stock

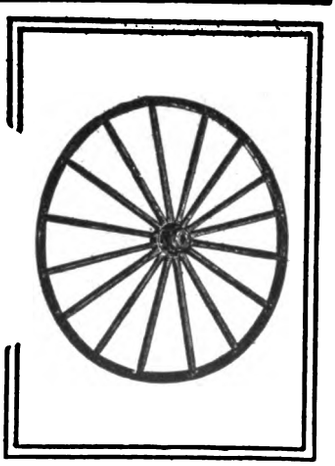
WHEELS

ALL KINDS—BEST QUALITY

Also RIMS and SPOKES

The Eberly & Orris Mfg. Co.

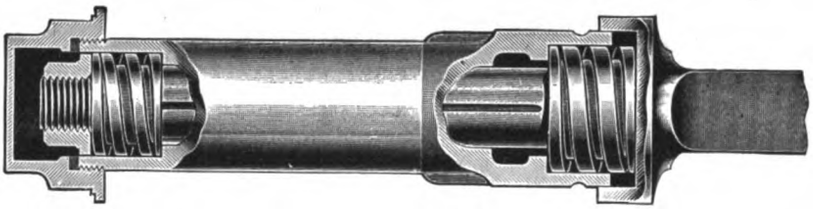
MECHANICSBURG, PA.



Please mention "The Hub" when you write.

Digitized by Google

PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

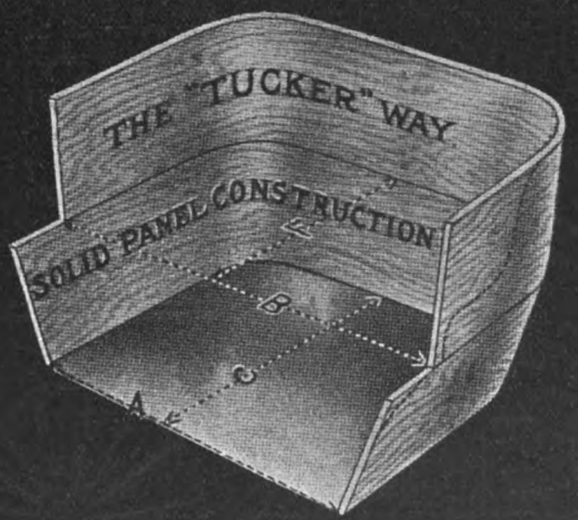
DALZELL AXLE CO., South Egremont, Mass.

BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

SOLID BENDINGS



MAKE FAULTLESS SEATS

CATALOG "H" SHOWS SIZES
WRITE FOR IT
THE TUCKER WOODWORK CO. SIDNEY, OHIO.

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway Station, 53d St. Elevated and all Surface Lines.

Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIREPROOF

STRICTLY FIRST-CLASS

RATES REASONABLE

All Hardwood Floors and Oriental Rugs.

Ten Minutes Walk to Twenty Theatres.

Transient Rates, **$2.50** with Bath, and up.

Excellent Restaurant. Prices Moderate.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

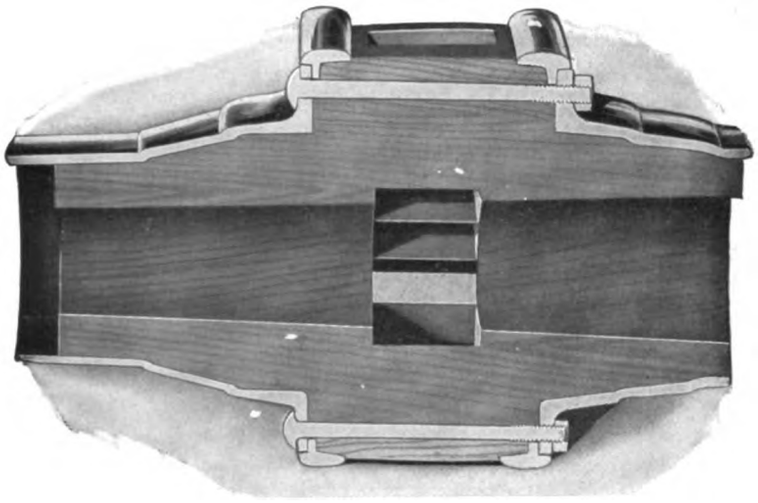
F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

C. T. RAYNOLDS & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

The American Wood Block Co., Delphos, O.



SECTIONAL VIEW.

Hub Blocks

Green—Air and Kiln Dried. Sold by grade or timber run. Compressed blocks or otherwise. 3 in. to 12 in. diameter. Stock kept up to standard quality and ready for shipment at all times.

GILLETTE'S

"IDEAL" HUB

It stands the Racket

The **IDEAL** hub makes the strongest wheel. Repairs are less than on any other style; actual use has proven these facts.

IDEAL is metal protected, wood to wood center, means elasticity; simplicity of construction, easily and quickly repaired, driven spokes best of all, no metal to corrode.

IDEAL has the patented inverted flange that prevents lateral strain.

IDEAL means less tire resetting.

Try it—it is guaranteed.

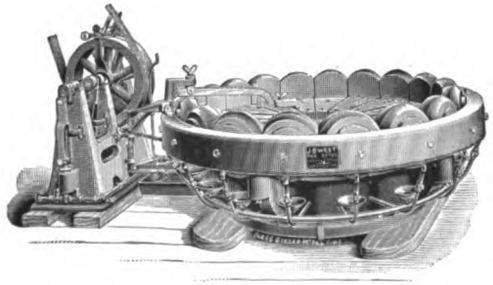
We want the wheel makers to use the **IDEAL** in their wheels.

The American Wood Block Co.

DELPHOS, OHIO

HUB BLOCKS HUBS DIMENSION STOCK

THE FIRST TIRE SETTER



you ever heard of was a **"WEST"**—probably, for they were on the market several years before any other and you are hearing more about them every year. Many of the older users are loudest in their praise. That's because they stand the test of time—they're made that way. Some of our Hydraulic machines have been **in use fourteen years** and are doing as good work now as when first installed. **Now,** we don't claim our machines are best simply because they have been longest on the market, **but because** we have been making a study of cold tire setting all these years and improving our machines as experience and observation taught us, and when you buy a **"West Hydraulic"** you get the benefit of this experience. Some people knowing our machines would set tires cold satisfactorily, thought some other would do as well—and the price was cheap—also machine. Now they wish they had bought a **"West Hydraulic." If you make a similar mistake it's your own fault.**

Buy a **"West Hydraulic"** and be happy. Hand or Power machines.

THE WEST TIRE SETTER COMPANY, Rochester, N. Y.

Digitized by Google

No. 140 Solid Foot

OUR No. 140 DASH

SOLID FOOT OR ADJUSTABLE
WITH SOLID WELDED RAISED RAIL

Japanned or Nickle Plated

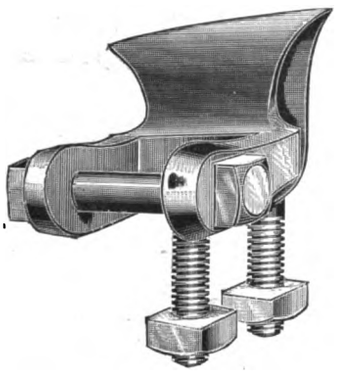
IS A GOOD SELLER

McKINNON DASH COMPANY

Cincinnati, O.
Troy, O.

Buffalo, N. Y.

St. Catharines
Ontario



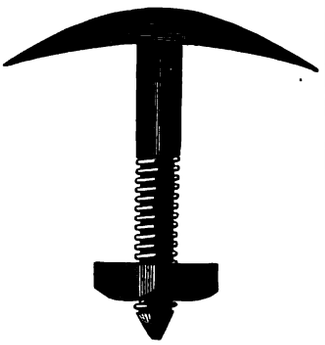
Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips 5/8 or 3/4 width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

1908 Catalog "H" on application.

COLUMBUS BOLT WORKS, Columbus, O.



Kokomo Solid Rubber Tires

¶ In rubber substance the Kokomo Solid Rubber Vehicle Tire is truly **SOLID.**

¶ Solid with the pure stock that has made them an exception to the ordinary tires of commerce.

¶ In Kokomo quality there is an established standard that is recognized as the highest ideal of tire construction. The Kokomo is a standard tire in every respect.

¶ Kokomo Tires always score in the running, and the longer the test the more convincing the results.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google

The Hub

STILL UNSETTLED.

If the tariff question is not settled to the satisfaction of the people of the United States, there probably will be another sort of a settling. The people of this country know which side of their bread is buttered, but certain aggregations are having their bread buttered on both sides.

Settled tariff schedules are demanded, and they must be settled right. It will be bad for the business interests if a tariff adjustment is turned over to a new Congress. Undue radicalism might characterize its efforts. The business interests have done all that can be done. A few more weeks will probably decide whether or not the people will have occasion to administer a rebuke to those who do not heed them.

Oldest Carriage Journal in the World

1858 1909

Digitized by Google

Vol. LI. No. 4 JULY, 1909

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

C. A. WILLEY COMPANY

Color Grinders

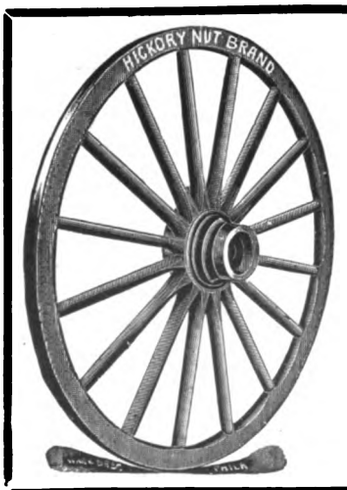
AND MANUFACTURERS OF

SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.

92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.



CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

ESTABLISHED IN 1791

Wm. Harland & Son

Beg to announce that they have removed their United States Headquarters to Genesee Street and Erie Canal, Buffalo, N. Y.

Wm. Harland & Son

IMPORTERS OF

Harland's English Varnishes

FOR

Coach and Automobile Builders, Railway and Street Car Finishing

AND MANUFACTURERS OF

High Grade Varnishes for all Purposes

FACTORIES:

MERTON, LONDON, S. W., ENGLAND.

GENESEE STREET and ERIE CANAL, BUFFALO, N. Y.

400 EASTERN AVENUE, TORONTO, ONTARIO.

Western Branch, 40 Dearborn Street, Chicago. C. H. Schooley, Manager.

General Manager United States and Canada, H. Hagger.

Please mention "The Hub" when you write.

Digitized by Google

JOHN W. MASURY & SON

MANUFACTURERS OF

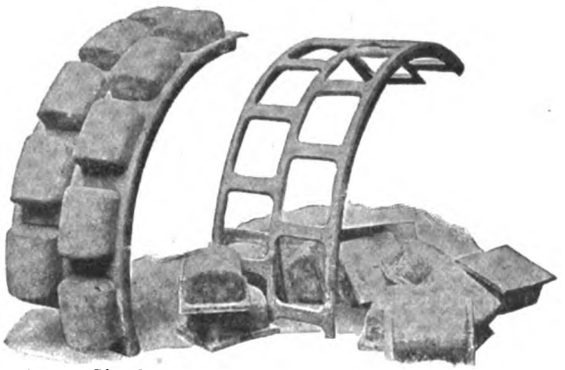
Superfine Coach Colors and Varnishes

NEW YORK——AND——CHICAGO

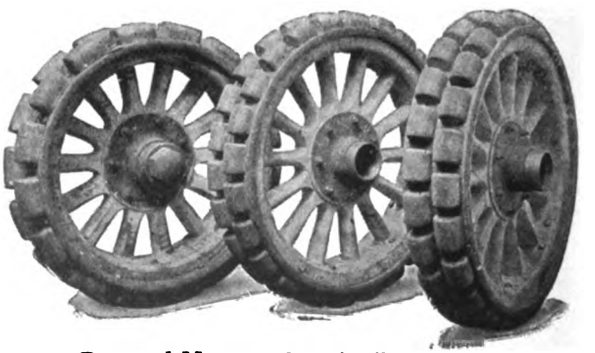
SOLVED!

Is the way the motor car experts express themselves on the subject of tires for commercial motor vehicles after seeing and using the :: :: :: :: :: ::

KELLY-SPRINGFIELD SECTIONAL TIRE



Double or Single Track. Sectional View of Double Track.



Patented May 17, 1898; April 9, 1901.

With a grip on the road that means progress and security from the fault of solid tires—that of crowding the rubber ahead under load, which means disintegration—the motor wagon and truck owner will find in the Kelly-Springfield Sectional Tires the best tire for all heavy cars. Each section is dependent upon itself. If interested, write :: :: :: ::

CONSOLIDATED RUBBER TIRE COMPANY

NEW YORK, N. Y.—and—AKRON, OHIO

Branches:

BOSTON CHICAGO PHILADELPHIA ST. LOUIS DETROIT CINCINNATI SAN FRANCISCO

Digitized by Google

DECALCOMANIE

"GOOD-AD" WINDOW SIGNS PALM, FECHTELER & CO. BOSTON 67 FIFTH AVE NEW YORK MONTREAL CHICAGO

Tranfers for all Purposes

Scrolls, Figures, Flowers, Letters, Animals, Stripings, Numerals, Corners, etc.

Special Name Plates of all descriptions. Buggy Ornaments in sets.

Beautiful Scroll Effects for ceiling work in Limousine bodies; also a large and attractive line of **Plaid Designs** for panels in automobiles. Every live manufacturer should look up this proposition. Nothing is more effective in body embellishment. **Cane Work Transfers** are also a big specialty with us. Name your wants and let us talk with you. New catalogue will soon be ready and will be sent with cash orders of $1.00 or more. No paint shop is complete without our catalogue.

Palm, Fechteler & Co

67 Fifth Avenue, New York

Chicago St. Louis Montreal Toronto

YOU will have to put offset bow sockets on all of your Auto Seats next season.

Don't get the idea that any old crook or kink will go. They must be uniform.

We offset the first auto bow sockets, and have been doing it ever since.

No extra charge for our experience.

Cortland Forging Company

CORTLAND, NEW YORK

Right Varnish Makes

Satisfactory Vehicles

Carriages, buggies and other vehicles that satisfy must not only be well made, they must also be **well varnished.** Your reputation and your profits depend upon the varnish you use. You can make no mistake by using

Standard Varnish Works' Varnishes

They are the standard of excellence because they represent a

Unity of Color, Lustre, Working, Drying and Wearing Properties

Of those not using these varnishes we ask for an opportunity to prove the validity of our claims

STANDARD VARNISH WORKS

CHICAGO NEW YORK LONDON BERLIN BRUSSELS

INTERNATIONAL VARNISH COMPANY, Ltd., Toronto

Please mention "The Hub" when you write.

Digitized by Google

V V V

Valentine's Vanadium Varnishes

¶ Developed for the special and exacting needs of the AUTOMOBILE, its MANUFACTURER and its USER, by the foremost makers of Fine Varnishes in the world.

They are Full Bodied, Free Working, Rapid and Perfect Flowing, Rapid and Hard Drying.

They resist the action of mud, rain, sun, oils, grease—hard usage of every kind—better than any other varnishes ever produced.

Unexcelled in Brilliancy and Durability, they **WEAR BRIGHT!**

The Pale Vanadium Varnishes are Palest High Grade Varnishes made.

The Vanadium Varnishes may be baked, if desired.

Over 80 per cent. of all the Exhibitors at the Automobile Shows of the last four years finished with

VALENTINES VARNISH

VALENTINE & COMPANY

New York Chicago Boston Toronto London Amsterdam Paris

Please mention "The Hub" when you write.

Digitized by Google

For the Limousine

Our line of Hardware Trimmings and Fittings is very complete. The "Season" is much earlier than last year and we suggest that your orders be placed at an early date. We can serve you better now than later, when the rush comes.

Broad Cloths, Bedfords, Laces, Trimmings, Megaphones, Toilet Cases and the 101 small details necessary for the well-finished job.

The English & Mersick Co.
New Haven, Conn.

82 Years' Experience in Every Can

E.S. 1827 &CO. **Edward Smith & Co.**

CARRIAGE VARNISHES

Everything from the
Bare Wood to the Finishing Coat.

CHICAGO **NEW YORK**

HOTEL EARLINGTON

55 WEST 27TH STREET
Near Broadway, NEW YORK

This well known, absolutely fireproof hotel, after being entirely renovated, redecorated and fitted up complete with new plumbing has now reopened.

Rates from $1.00 and Up
With Bath, $5.00 and Up

Special rates by the season or year for permanent guests. A special feature will be the cuisine, both in the dining room and in the new cafe for ladies and gentlemen. A la Carte and Table d'Hote.

Hotel under the management of

GUERNSEY E. WEBB
Formerly of the Ansonia.

FOR AN EASY RIDE

AROUND THE WORLD

THAT

Stein Double Cushion Tires

ARE KNOWN

"Around the World"

for that Quality, which embodies

Toughness, Strength, Durability and Resiliency

A combination that has made them famous.

STEIN DOUBLE CUSHION TIRE CO.

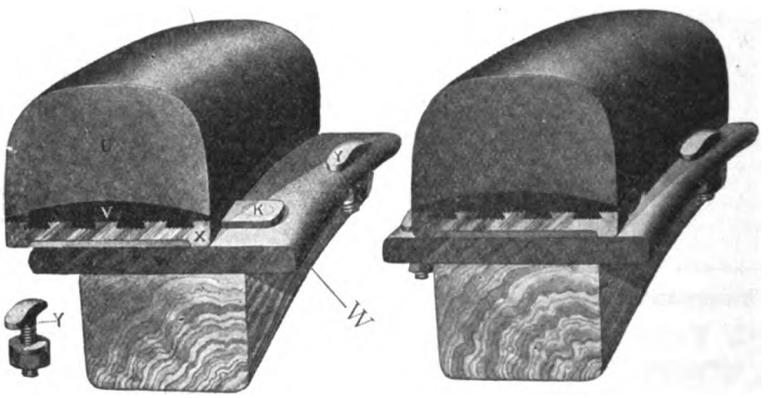
AKRON, OHIO

Digitized by Google

The Goodrich "WIRELESS" Motor Truck Tire

The construction of the Goodrich Wireless Tire marks as great and important an advance over all other types of motor truck tires, as does the wireless telegraph over all other methods of signalling at sea. It sets entirely new standards of mileage obtainable, cost per mile, and freedom from repairs.

Construction.—This tire consists of three integral factors: (X), a special steel base having dove-tailed grooves on the top surface; (V), a hard rubber sub-base which is inseparably united with the steel base; and (U), soft rubber tread or tire proper, which is inseparably vulcanized upon the hard rubber sub-base. The tire is held in place upon a special steel felloe band (W) by means of lugs (Y) on either side of the steel base, and a key (K) on the felloe band which fits into a key-seat on the steel base of the tire, preventing circumferential movement. Thus the fastening point of the Wireless tire is steel to steel, and absolutely secure.



ADVANTAGES

The "Goodrich" Wireless Tire affords the following advantages over all other types of motor truck tires:

(1) **Increased Mileage,** because it affords a maximum external abrasion without affecting its fastening to the wheel.

(2) **Decreased Cost per Mile,** because it will give more mileage in proportion to its cost than any other rubber truck tire.

(3) **Freedom from Repairs,** because the component factors form an inseparable unit and thus eliminate the usual hinging action of the rubber over internal metal fastenings.

(4) **Simpler Method of Applying.** The principle of application of this tire is that of a drive fit between two metal surfaces, which are of such a nature that they oxidize or freeze together to a marked degree immediately after application. No complicated tire setting machine is therefore necessary.

(5) **Better Service from the Dual Type,** because of decreased width of tread over all, affording maximum contact with road surface and more perfect distribution of the weight upon the spokes.

(6) **Adaptability to Standard Wheel Sizes,** because the Goodrich "Wireless" tire may be applied to any wheel now made for solid rubber motor truck tires.

(7) **The Wireless Guarantee.** We guarantee this tire to be free from defects in material and workmanship, and we also place special guarantees for certain periods of time on both rapid and slow moving truck tires.

Detailed information regarding sizes, prices, discounts, guarantees, etc., will be promptly furnished upon application to any of our Branches, or to the Motor Truck Tire Department at our factory.

THE B. F. GOODRICH CO., AKRON, OHIO

BRANCHES IN ALL LARGE CITIES

Digitized by Google

The Hub

Copyright, 1909, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. LI. JULY, 1909. No.4.

THE TRADE NEWS PUBLISHING CO. OF N. Y.
Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*
24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

REPRESENTATIVES:

J. Henry Klunk. J. G. Tanner.

Other Publications of Trade News Publishing Co.:

HARNESS (monthly) .....per year, $1.00
AMERICAN HARNESS AND SADDLERY
DIRECTORY (annual) .....per copy, $4.00

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide du Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

The Carriage Builders Will Dominate.

No more conservative class of business men are to be found than the carriage builders, and yet within their field they have always manifested a progressive spirit, especially along commercial lines. The enormous plants erected are a monument to their enterprise and energy. The history of practically all of the great plants during the past thirty years is a history of struggle and confidence in the ultimate outcome. It has often been said that a carriage is a luxury. Casting out the element of untruth in this statement, the fact remains that the great success of the carriage builders is because they have made what has been regarded as a luxury, a necessity. They have stimulated the riding habit. The developments and expansions have come from hustling, taking a bird's-eye view of the whole United States, and planning accordingly.

In short, the carriage industry of to-day is what it is because of the energy, enterprise and self-confidence of its manufacturers. The railroads opened new territory, the farmer followed, and the vehicle and implement men were on his heels.

But new conditions have been slowly developing for the past ten or fifteen years. A new force and factor has entered the arena of locomotion. What it was or portended at first, was uncertain. Was the early automobile to be a fad, or what? It certainly fought its way, and scores of fortunes have been lost in the efforts to make it what it is to-day. The public was slow to speak, while the inventors, engineers and shop mechanics were struggling through the evolution process.

Already a surprisingly large number of carriage builders have taken their proper place in the automobile industry and their power and influence is being felt. Many more are following, as can readily be seen by anyone who has been a close reader of trade events the past few months.

The carriage builders have found their exact and most profitable relations to this new industry, and its future will be largely dominated by them. This domination, greater or less, is now in sight, and the spirit which evolved the present carriage industry out of the kernel of thirty years ago will size and organize the opportunities for trade now presenting themselves.

Washington

With the turn of the half year the carriage and accessory manufacturers begin to think of the coming meeting, the thirty-seventh annual meeting of the C. B. N. A., at Washington, D. C. Secretary McLear is in the saddle and the work of preparation is now under way. This meeting ought, and no doubt will, attract a good many southern manufacturers. Northern manufacturers had a most agreeable welcome at Atlanta, and they have not forgotten that warm-hearted greeting.

Washington is neutral territory, as it were. It is not a manufacturing city, but there are sights to see that ought to bring out the largest attendance in the history of the association. He who has not seen Washington has missed a sight that can never be made up. Then there is the visit to Mt. Vernon, the home of General Washington. Of course, one main attraction, T. R., will not be there, and possibly his successor will be a-flying somewhere about October. Washington is a picture of republican institutions. It stands for centuries of bloody achievement on battlefields. The Hub does not propose to allow any carriage builder or accessory manufacturer to forget the coming convention.

The Cost System.

The establishment of a cost system is about as approachable as a saucer of hot soup to a cat. No matter from what point of view it is approached, the same difficulties and uncertainties present themselves. If a cost system that will work is not possible in a carriage building center like Cincinnati, what can less favorably situated centers expect to do. During the past three or four weeks Mr. Armleder has been busy, in an individual way. Here lies the difficulty. The builders individually do not want to inaugurate the system; at least they are not piling over each other to do so. They want some cut and dried method or plan or system elaborated which

Digitized by Google

they can turn over to their bookkeepers to do the rest. But it will not work that way.

The ugly truth about this whole matter is that while there is the most urgent need of the establishment of a uniform cost system, the conditions for its establishment are not quite ripe. And the reason for this is that the methods and the cost of production are not alike in any two shops or factories. True, raw material costs every manufacturers about the same. The differences arise in the manipulation and handling of the material and the absence of uniform methods. Then, no two factories are similarly equipped, though many approach similarity. This problem will to a large extent work itself out rather than be worked out. Even the best system that can be evolved will develop friction. But the cost system is coming all the same.

Increase in Wagon Shops.

A leading western builder makes the statement that during the past year a larger number of wagon shops have been established in various parts of the country than carriage factories. This statement can be readily accepted. As population spreads into new regions, the wagon is a greater necessity than the carriage. Besides, carriages are more easily and cheaply packed and shipped, and agencies for their distribution are more cheaply maintained. The monthly reports in the vehicle press show a steady increase in the number of wagon shops, some of them doubtless very small, but the basis of larger plants later on. Some of the larger wagon manufacturers in the central west have been endeavoring during the past few months to get into closer touch with distant communities by establishing branch agencies or places where their products can be shown. The wagon builders are manifesting creditable enterprise, and are as energetic in reaching possible customers as the carriage builders have been in the past.

Cincinnati Holds Up Her End.

Down in Cincinnati the draughtsmen are evolving some original features in carriage construction which have for their object commercial advantages rather than for the sake of art. The Cincinnati builders are essentially practical men. They have always encouraged that type of drafting originality which looks in the direction of results as measured by dollars and cents. A couple of the leading salesmen of that greatest-of-all American carriage building center recently observed that the stimulus to original or selling features comes from the carriage users. There is, they say, a growing demand for carriages which possess the fine touches of the draftsman supplemented by the skill of the trimmer and upholsterer.

No matter how discouraging the carriage business may ever become, those who represent it in its higher lines will never lose sight of the fact that the love of the artistic and beautiful will ever remain a motive or incentive to the best possible work. The Cincinnati builders are upholding the dignity of the trade and are preserving its finer features. They are not overwhelmed with the mere spirit of commercialism.

Commercial Strength.

An encouraging indication is the increase of the capital stock of quite a number of carriage and wagon plants. And another is the increase in the number of concerns that are manufacturing equipment for automobiles, some of which are under the management of persons identified with the carriage industry. The auto industry is rapidly becoming an industry in which the association of parts is the chief end. Just as the carriage industry has been for many years.

The fact is recognized in the formation of these new companies that safety lies in more capital—to provide for those inevitable emergencies that follow in the wake of trade. The thousands of small failures in the past have been largely due to business incompetence and lack of capital. Both these drawbacks are being overcome. The factor of incompetency will never be eliminated in business channels, but it is being minimized. The establishment of industries with sufficient capital to meet all probable emergencies is now the rule rather than the exception. The conditions of the carriage industry are such that it can never seriously suffer from over-concentration. Hereafter whatever evils it may encounter, they will not be due to insufficient capital. The lesson of having enough money with which to do business has been severely and effectually learned.

The Foreign Field

The strain of almost two years of depression is subsiding and industries, big and little, are preparing for a resumption of anti-panic activities. The railroads are re-entering on a policy of expenditures on a large scale. Steel freight cars are taking the place of wooden cars. Terminal railroad facilities in the larger cities are being adjusted to traffic and travel requirements. The steel mills, long operating on half time or less, are now approaching the limits of maximum capacity. Immense and profitable crops are promised. All conditions are favorable.

Among the great problems pressing for solution is that of broadening our export trade. In this, the farmers are not so directly interested as the manufacturers, for they are assured of an increasing market. The United States has been too busy building up at home to think much of the outside world. But the outside world needs us and the products of our farms and factories. A vast field is offered in China. Circumstances will establish a new foreign policy as to trade.

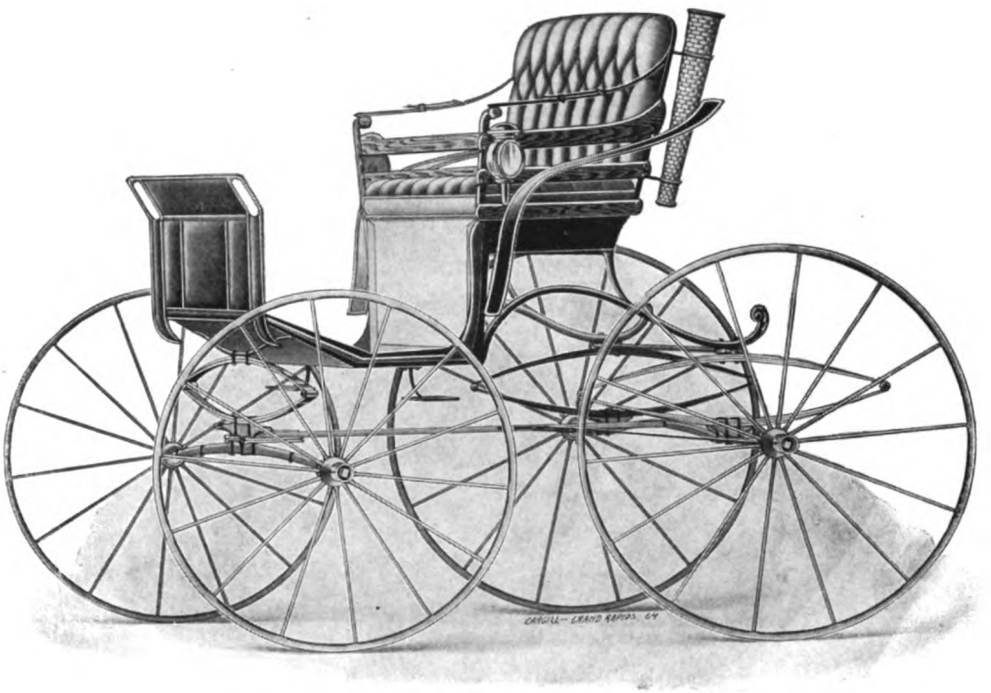
Drivin Wagons.

One of the peculiarities of the carriage business is the unexpected springing up in sections of a demand for certain styles of vehicles. The runabout is the most typical vehicle that encountered a strong local demand, but it extended, practically, to all sections and to all markets. Under this general demand the runabout has been improved up and up until its former simplicity has become almost submerged. In some localities or sections mention is made of the growth of demand for gentlemen's driving wagons in their various modifications. This popular wagon has already undergone general minor changes, especially as to shape of seat. The style of upholstering is different also from what prevailed a few years ago. A few large builders are endeavoring to take full advantage of this leaning towards driving wagons. To a certain extent they invade the domain of the buggy, lacking, of course, that comfortable and distinctive covering which makes the buggy the indispensible vehicle for a vast majority of vehicle users. The newer makes of driving wagons are neat and calculated to win.

The American Harvester Company has demonstrated the extent of the possibilities in one line of exports.

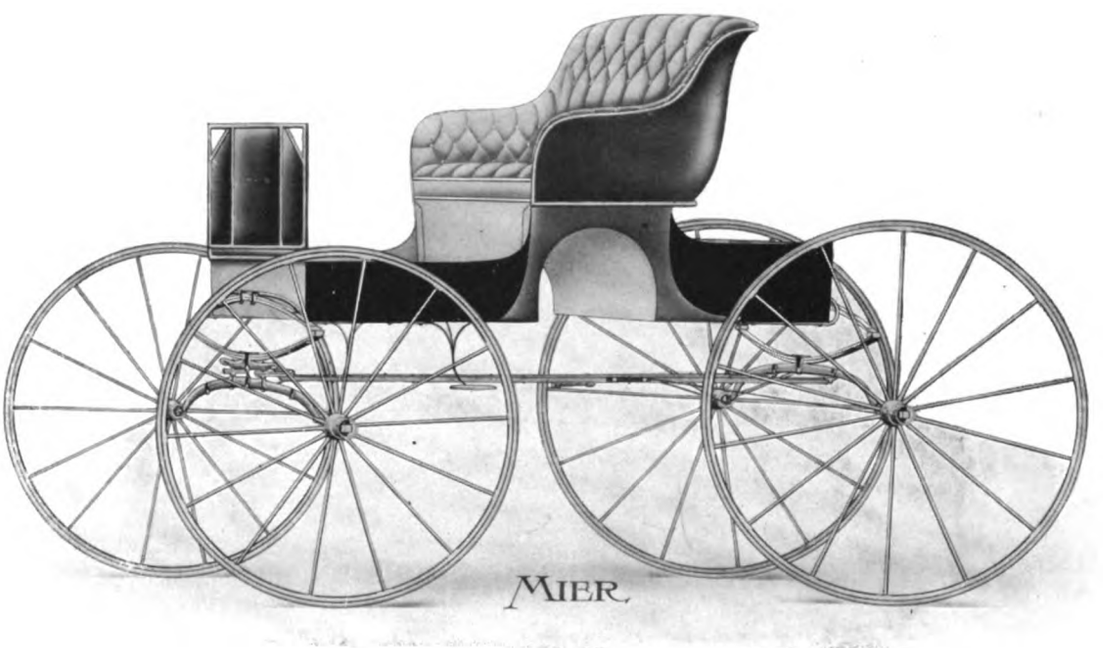
Digitized by Google

Illustrated Carriage Section, July, 1909



PARIS DRIVING WAGON.

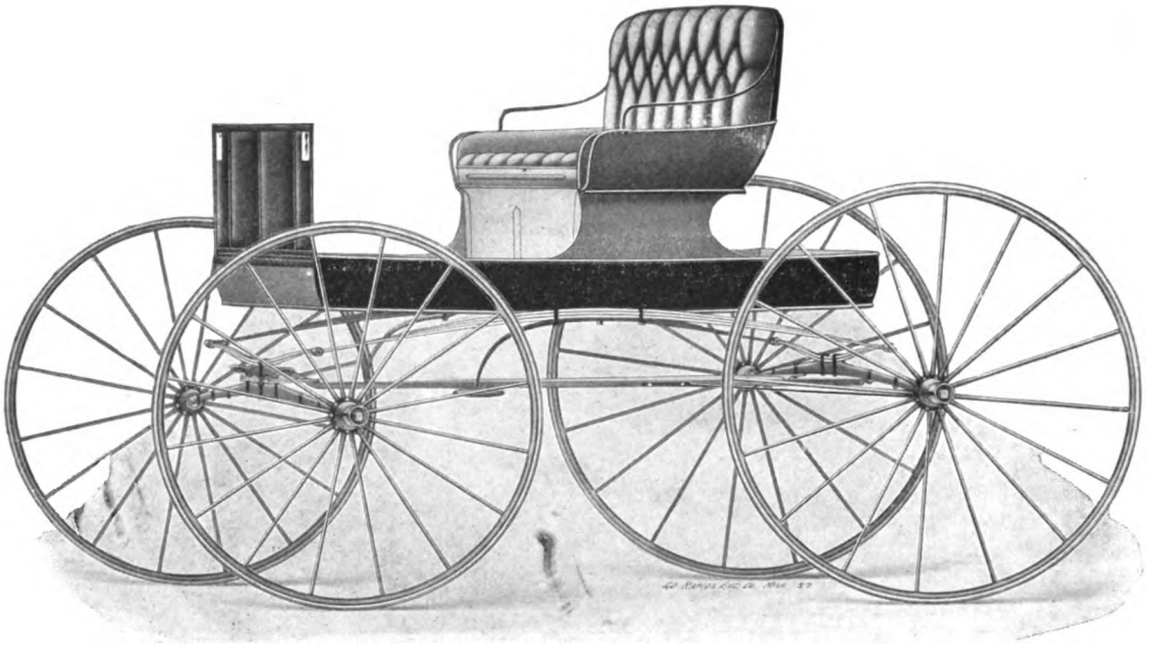
Built by The George Delker Co., Henderson, Ky.



AUTO SEAT DRIVING WAGON.

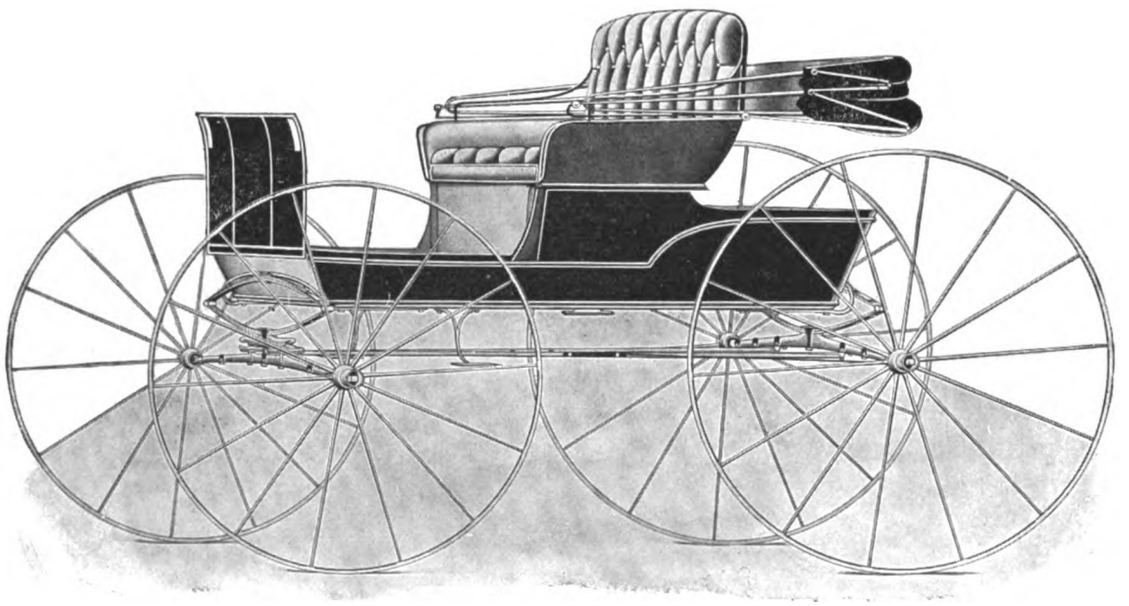
Built by the Mier Carriage & Buggy Co., Ligonier, Ind.

Digitized by Google



BUSINESS BUGGY FOR CITY USE .

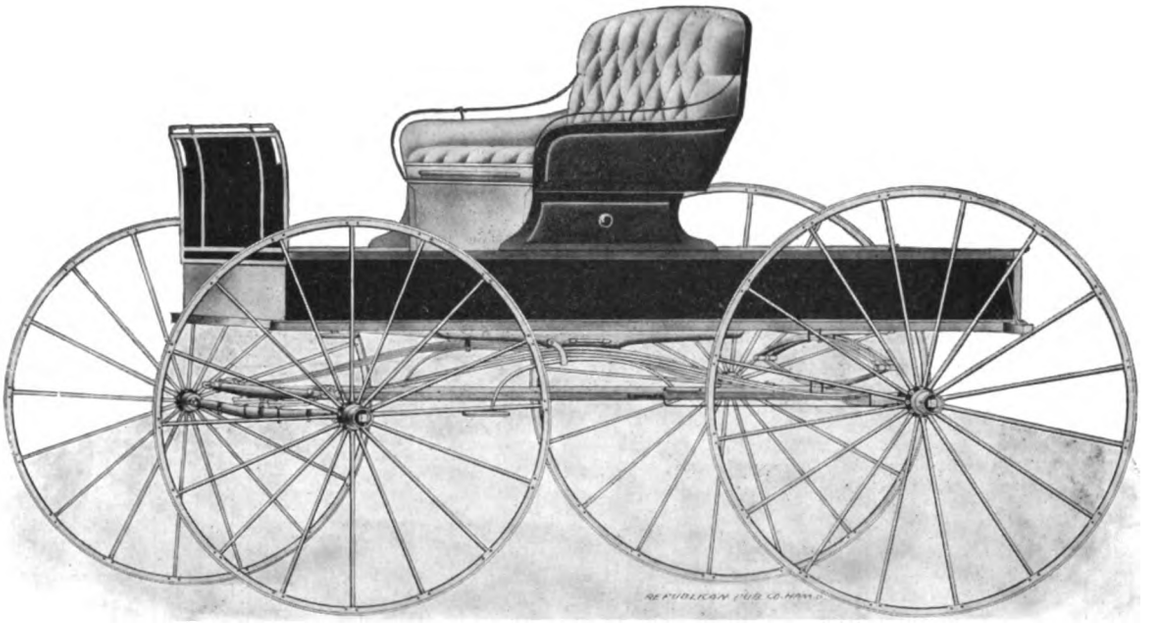
Built by F. A. Ames Co., Owensboro, Ky.



END SPRING CORNING WAGON.

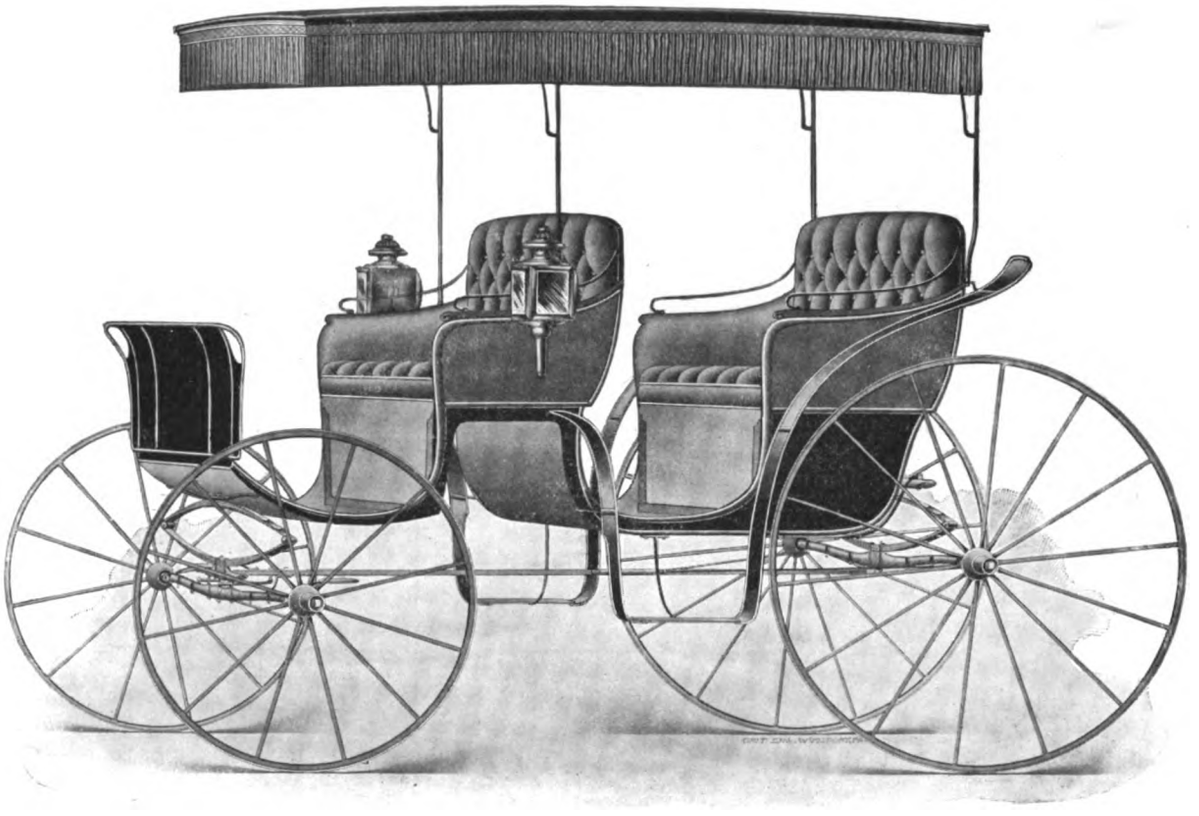
Built by McKay Carriage Co., Grove City, Pa.

Digitized by Google



CONTRACTOR'S WAGON.

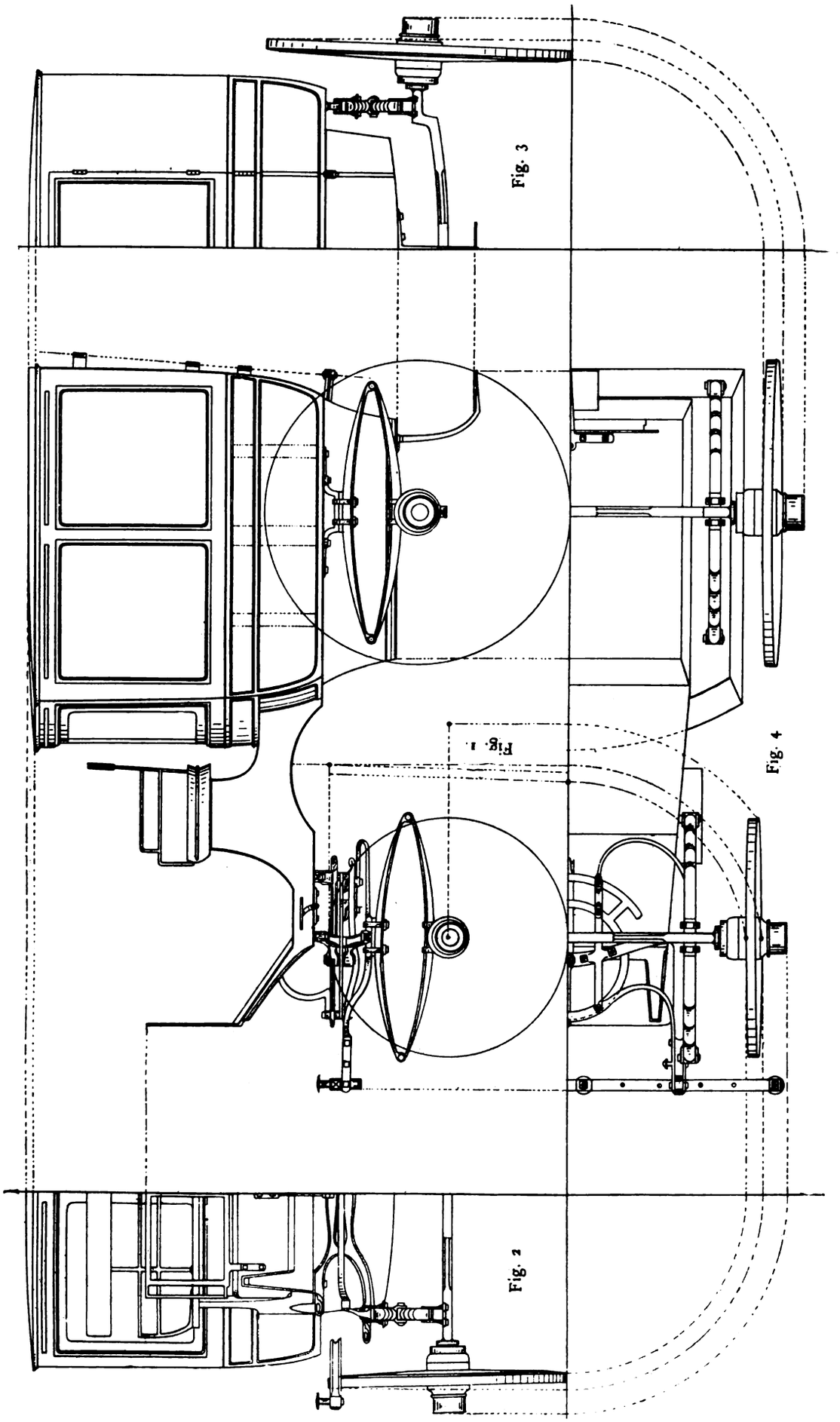
Built by Staver Carriage Co., Chicago, Ill.



CANOPY TOP SURREY.

Built by Mifflenburg Buggy Co., Mifflenberg, Pa.

Digitized by Google



WORKING DRAWING OF GENTLEMAN'S LIGHT 'BUS.

Described on opposite page.

Digitized by Google

Wood-working and Smithing

WORKING DRAWING OF A GENTLEMAN'S LIGHT 'BUS.

Drawing on oppisite page.

The Gentleman's light 'bus is with all carriage users a style of carriage that wins their favor. It has a following in its usefulness that is quite cosmopolitan.

In construction is can be built solidly as a 'bus, or it can be made for the head to be taken off by the top moulding of the waist rail, and thus form a roomy style of large wagonette as an open carriage.

This is an advantage that has made the gentleman's light 'bus a favorite family carriage, with those living in localities that are far from "the maddening crowd."

The design offered herewith is on very taking lines in their art formation, yet with a certain racy cut that gives life, where otherwise ponderosity might creep in to overclod the surfacing, to the sacrifice of dignity, which is the most striking feature to portray in carriage design. Art is one element, but to clothe art in the striking garb of dignity is a power as rarely met with in draftsmen as that of the creative power to design and fashion.

But if the student of carriage building will only study the work of those who have become a standing unto themselves, he will find that those elements of art and dignity, together with good construction, stand out as conspicuous features in the qualities of their carriages. And that in those very qualities lie the commercial strength of their success.

The 'bus herewith is designed to carry six on the inside, to keep the length of the side of the body short in appearance, and also to give a rich and roomy look to the interior, a circular front is added to compensate for the side shortness. This feature gives a very pleasing effect to the outline, while the built-in corner pillar, with its rich turnunder and the mouldings worked into a panel quarter, tend to give grace of outline as well as strength of character to the boots fixing and construction.

The surfacing of the body is cut up into panel divisions to give proportion to its depth. The corners of the bottom side corner pillar mouldings are curved in their corners to harmonize with the circular front, and the curvature of the boot's design. The boot is fashioned to show strength and outline. The body rocker is made at a depth to provide a proper depth of leg room, which, with the curve in the bottom to help in this, and the depth of the cushion, a comfortable leg room is obtained, while the inside of the body from the seat boards to underneath the roof slat, a depth of 42 inches at least if necessary, and which the drawing gives. The back of the rocker lines with the hinge and shutting pillars of the body in their return lines, while in front it stands back from the bottomside crossbar to which the boot bottom arch panel is fixed, and the arch panel of the rocker.

The space from the top of the rocker to the edge of the bottom arch panel is provided for the fixing of a roller brake, with which these particular carriages are invariably fitted. The seat rail is forged in double tier, the foot board is fitted to the top of the brackets and plated up the edge of the side, and footboard top.

The back of body is one controlling ogee line from roof to rocker bottom. The hanging of the door is with brass double jointed hinges, while the bottom of the door is supported with a full strength outrigger hinge, fixed in line with the bottom of the bottomside. Hinges fitted in this way to a 'bus door make by far the best job of the hanging.

The hanging is on elliptic springs all round, while the under carriage is fitted with double transom bearing felloe pieces, the futchells being of iron are forged into the bottom bed plate. The top carriage is double bedded, and fitted together with center nunter, on the top of which the center stay foot rests and the top foot takes the foot board.

The elevation, Fig. 1, shows the design of body and frontal hanging, the hind hanging being on elliptical spring and center stay. This method is very widely employed now, though it is not so steady as when grasshopper springs are used. The bearing being central, the weight is, as it were, pivoted. While with grasshopper springs and scrolls, a double bearing is given to the body which tends to prevent side motion, and is therefore a better method of weight distribution; but it is attended with much more expense and trouble than the elliptic method shown in Fig. 1, which is much simpler and yields a motion to the riders quite equal to that obtained with grasshopper springs. The springs take their bearing on the top of the axle, which is cranked to allow of the springs deflection and the body's clearance.

Fig. 2 shows the half front view, and its design in working up the boot quarter and front light, the shape of the brackets and footboard are also shown here, and the design and depth of the undercarriage beds. From this section all the cross measurements can be taken at any point of the body's width and those of the undergearing as well.

Fig. 3 shows the half back section of the body, and the design of paneling and moulding of the quarters and the doors, widths of track, length of axle and its depth of crank, also the width over flaps and the position of the springs and stay on the body transversely.

Fig. 4 shows the half plan and the track of the wheels, which is projected to the elevation, showing the point of clearance necessary from the top of the wheel to the arch panel. The widths of body and its points of construction are all defined in this section, also the boot's construction. The widths of position of the gearing on the body, and their relation thereto, are all accurately shown; the position of axles and flaps and step fixing, design of undercarriage, bottom up, and the shape and strength of the forgings, diameter of transome wheel plate, and its double bearing and how it should be forged. The length of splinter bar is also shown.

The body is framed and panelled in the quarter spaces, and the mouldings all worked up in the solid. The corner pillars are got out to a double turnunder, back and side, as in Fig. 2 and Fig. 3, and the moudings worked up in the solid and curved in the corners to follow the lines of the body in harmony.

The sides of the body are bottom framed, to hold the panel to position, as well as for structural strength. The front pillar is put in in a fullness to the width line of the boot, and on the curve to follow the circular front. The pillar is panel boxed and the mouldings worked out, as shown in Fig. 1. The pillar is of sufficient width to form a good bearing surface to fix the boot side to, also for the body plate.

The inside face of the pillar is dressed to the contraction line of the boot. This should be strictly observed by the body makers, and the outside line of the pillar, which is on the curve both ways, dressed to allow of the face side being pitched at an angle to follow the boot's construction. The face side of the pillar cannot be bevelled. This must be done on the outside curve line of the pillar. The bracket should also be dressed to the contraction line of the boot with the horizontal. The hind pillars are all got out square on their curves. But the door shutting pillars should be dressed to the shutting angle of the door line, on their edge way, so as to allow of the pillars

Digitized by Google

being framed in these lines on their face sides. They cannot be dressed to a bevel on their face sides, because of their curvature. Therefore the bevel must be worked on their edge, or curved line, which allows them to be turned to the shutting line correctly.

The head is lightly framed and panelled; the outside edge lines should be mitred in the joints, the roof boards come level with the outside panelling, and if covered with leather or other material a cornice moulding is fitted all round the edge line to run the water off.

The sizes of the body are: Length on bottomside from corner to corner, 42 in.; round on front corner, 3 in. Length of body on waist rail, 4 ft.; full compass on front, 7½ in.; full length of head on roof line, 4 ft. 1½ in.; compass of front at this part, 7 in.; full depth of body side over waist rail, 14½ in.; depth of head from top of waist rail to top of cant rail, 28½ in.; rise on roof, 1 in. Length of rocker on top line, 3 ft. 7 in.; on bottom, 36½ in.; depth of ditto, 9½ in.; curve on bottom, 1½ in.

Span of bottom arch of boot, 19 in.; length of bottomside, 17 in.; length of bracket, 14½ in.; full depth of side, 17 in.; width across top of boot, 10½ in.; across neck, 5½ in.; depth of platform neck, 3 in. Length from head line to back of boot, 12 in.; width of seat, 14 in. by 40 in. long.

Width of body on bottom of rocker, 33 in.; on top, 36 in.; over back quarters on corner pillar line, 4 ft.; on waist line, 52 in.; width of door, 22½ in. Depth of windows, 22 in. by 20 in.; width of center pillars in head, 3 in.

Fig. 1, elevation in full; Fig. 2, half back view in full; Fig. 3, half back view in full; Fig. 4, half plan from which all measurements can be taken.

Gearing: Height of hind wheels, 46 in.; spokes, 1¾ in.; tires, 1⅜ in.; I. R. Height of front wheels, 36 in.; spokes, 1¾ in.; tires 1⅜ in.; I. R. Length of hubs, 8¾ in. Warner standard.

Length of collinge axles over collars (hind), 49½ in.; over solid flaps, 44 in. Depth of crank over all, 5 in. Strength of axle, 1½ in. Length of boxes, 9 in. Width of flaps, 1¾ in. by 6 in long. Front axle over collars, 45½ in.; over collars, over flaps, 38 in. Width of ditto, 1¾ in. by 6 in. long. Length of boxes, 9 in. Strength of axle, 1½ in.

Length of hind elliptic springs, 38 in. to centers. Number of plates, 6; width of ditto, 1¾ in.; strength of back, 5 1-16 lbs.; back plate, 9-32 in.; other plates, ¼ in. Compass over all, 9 in.; depth of spring stay, 2½ in. Length of front springs, 36 in. to centers. Number of plates, 5; width of ditto, 1¾ in.; back, 5-16 in.; back plate, 9-32 in. Other plates, ¼ in. Compass over all, 9 in.

Compass over carriage beds, 8½ in.; diameter of transome wheel plate, 18 in. and 26 in. Length of splinter bar, 5 ft. 5 in.

Depth of hind step, 12 in.; from ground, 14 in.

Height of body from ground to bottomside line, 37 in.

Height of front bottomside from ditto, 38 in.

VEHICLE DEALERS HANDLING THE AUTO.

The following well known vehicle dealers, it is said, will shortly handle motor cars: John Mann, Shattuc, Ill.; D. W. Long & Sons, Moline, Kan.; Strubler & Hiltenbrand, Naperville, Ill.; D. C. Jones, De Pere, Wis.; L. F. Leelderboge, Ludlow, Ill.; L. W. Milbourne, Benton Harbor, Mich.; Austin Rea, Hilman, Mich.; Brennand Wilke & Co., Oshkosh, Wis.; E. C. F. Mohr, Westfield, Iowa; Lueth Bros., Kankakee, Ill.; Fred Nolte, Buckeye, Iowa. Hundreds of other dealers are already carrying automobiles in stock and are making many sales.

EMPLOYES TAKE A DAY OFF.

The annual outing of the United States Carriage Co.'s employees, Columbus, Ohio, was held June 19. Buckeye Lake was the objective point and the trip was made in special trolley cars chartered by the company. Handsome prizes were awarded to the winners in the various athletic contests.

SOME PRACTICAL HINTS ON WAGON REPAIR WORK.

The following hints have been gleaned from an experience extending over quite a number of years and are given to the craft in the hope that they will prove of value and benefit.

In the country repair shop black is the color generally used for striping. To mix it so as to work free, take drop black and mix it as if it were going to be used as ordinary paint, then add enough heavy varnish to hold it together. It will then work freely and will not run. Yellow is also a handy striping color to have around the shop. It goes well with the gear in the red, wine color, black, green or brown.

If when setting the tire on a light wheel, you should pull it to dish, stretch the tire cold by pounding on the edge with a fuller.

To tighten the box in a wheel, do not wrap the box with canvas and drive in. It is sure to get loose again. Take a piece of pine board and split off a lot of very thin wedges. Place the box in the hub, get it centered, and fill up tightly between the box and the hub with the pine wedges. When you have driven in all the pine you can, get some hard wood wedges and wedge, as you would on a new job.

Sometimes a wheel comes to the shop with the tire spiked on. To drive the cold chisel between the rim and the tire is rather hard on the former. Find where the spike is, center punch it, put the wheel under the drill and bore the spike out.

If when taking a weld on large iron the fire is dirty, take some salt and throw into it. It will clean your fire and make it burn brightly.

Wagon bolsters are generally about the same size and shape. In spare moments make up several and paint them. The paint prevents the air checking them, and also if a man is in a hurry you do not have to let the job go without painting.

Suppose you wish to make a dowel. Take a square piece of wood which will make it the right size, trim it to eight faces and then round up as near as possible with the smoothing plane. Take a piece of maple, the end of an axle will do, and bore a hole in it the same size as you wish the dowel. Now drive the stick through the hole, as at A, when it will be about as round as if turned in a lathe.

If the center plates on whiffletrees are bolted on with 3-16 in. tire bolts, they will not cause annoyance by becoming loose.

When replacing an old rim with a new one don't drive the old rim off, as there is danger of disturbing the spokes in the hub. It is better to split the old rim off by driving wedges into the face of the rim, as shown at B.

Light delivery wagon wheels should be riveted each side of the spoke in the rim (C in the engraving) to prevent the tenon of the spoke from splitting it. Place the wheel on the wheel horse, face up, mark where the rivets come and bore with a screw bit, which the rivets will follow tight, and drive your rivets in. Take the wheel off the horse and screw it face down on the iron tire platform, place the burrs on, cut the rivets the right length and rivet them. Proceed with the other wheels in the same manner.

A wheel two feet six inches high, with a four-inch tire, is sometimes a troublesome thing to rim. By putting on rims two inches higher than the wheels you will overcome a lot of that trouble, as a bent rim will pull down easier than it will pull open

Suppose that a wheel with a four-inch tire comes to the shop to have a couple of new spokes put in. The tire is tight on the rim and you do not wish to injure the wheel. Just take an old, coarse saw and saw a piece out of the joint, D, strike a few sharp blows on the sole of the tire and you will find that your tire will come off easily.

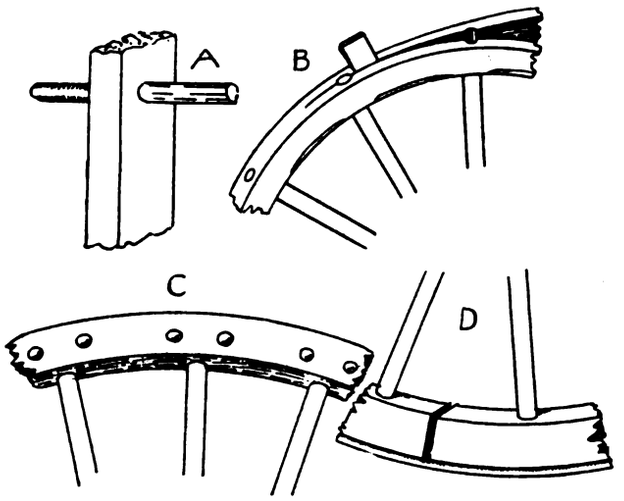
When the bands on a hub get loose do not take them off and cut and weld them; it is unnecessary. Make a lot of thin wooden wedges. Then take a thin iron chisel and drive into the hub pretty close to the band, pull out and drive one of the

Digitized by Google

wedges in its place. Do this all around the hub and the band will be as tight as necessary.

The first point in making wheels is to select good material. The second is have the wheel proportioned proper. Be sure that your hub is large enough; it should be of such a size that it will allow the spoke to be in the hub as deep as it is wide, and to allow a space of one-eighth inch between the spoke and the box. If the spokes touch the box they will soon become loose.

Always use a dodged hub. It is the best because the dodged spoke acts as a brace, and also the hub is not cut away so much in one place as when mortised straight. Drive the spokes so that the wheel will have one-eighth dish. When the tire is set the wheel should not pull to dish. If it does, the spokes are bent or they have moved in the hub. Be very careful in mortising the hub. First, get the feet of the spokes all on taper, about one-eighth inch for heavy wheels and one-sixteenth for light ones. When the mortise is made it should be exactly the same shape as the foot of the spokes, but one-eighth inch smaller endways, so that it will drive tight. Of course, you have to be guided by the material in the hub as to how tight you set the spokes to drive. Take a hammer of suitable weight, dip the spoke in some very thin glue and drive it into the mortise. Do not drive with a wooden mallet, because you cannot drive a spoke as tight with it. Do not set the spoke too tight, for when it is driven it will cause a shoulder to form on the back



SOME PRACTICAL HINTS ON WAGON REPAIR WORK

edge, which will allow the wheel to pull dish and the spokes will not remain tight. The next move is to cut the spokes off the required length.

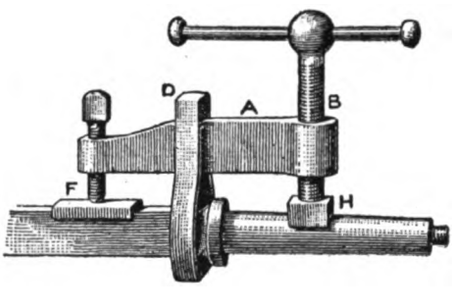
When cutting the tenon on the spoke do not cut it straight with the spoke, for if you do when the rim is put on the joints will be hollow. Always cut the tenon a little back of, but straight across, the wheel. This will cause the joints to be high, so that when the wheel is screwed down on the platform it will bring the face of the wheel level. When the tenon is cut on the spoke, take a chisel and cut a shaving off the top and bottom. This will prevent it from splitting the rim. There should be a wedge driven in the tenon after the rim is on, to get it up to the shoulder of the spokes so as to enable the workman to cut the correct joint.

Axles have caused a great deal of trouble to a number of workmen. When the principle is understood the laying out of axles is very simple. A wagon axle when set right, without a load on, should measure three-eighths inch less at ground than at the hub. When the wagon is loaded the wheels spread and are then on a plumb spoke, or in other words, the front spoke (if the spokes are dodged) will be square with the center line of the axle. The wheels should also measure one-half inch less in front than behind. This causes the wheel to run up to the shoulder all the time and takes the strain off the nut. This is called the gather of an axle. If it is gathered too much it will cause the wagon to run hard. Some people have a notion that if a wagon talks loud it runs easier, but this is not the case.

To proceed to lay out an axle, take one side and edge up square and straight. Draw a line up one-quarter from the bottom of the axle. Find the center endways, which is two feet nine inches when the track is four feet eight inches, the axle piece being cut off five feet six inches long. From the center measure half the width of the track, and from this point measure back the distance it is from the front of the front spoke to the back of the hub. This shows where the shoulder comes. Now, from the bottom line at the shoulder mark place half the size of the arm. Do the same at each shoulder; then draw a straight line the length of the axle through these marks. This is the center line. Now, from the center line at the length of the arm from the shoulder measure three-sixteenths of an inch down. This will cause the axle to be set right if the wheels had no dish. But wheels having dish find out how much by placing a straight edge across the wheel and measuring how far it is from the spoke to the straight-edge at the hub. Now, take half of this and add to the three-sixteenths already mentioned, and place down from the center line and this will give the correct pitch. Find the size of the arm inside and mark it on the axle, not using the center line, but the line that is drawn from it. For the gather go one-eighth inch forward of the center and this will give about the right amounts. If both wheels have not the same dish it will be necessary to lay them out separately. The foregoing is for new work where the two axles are put in at once. Of course, for repair work the axle should be set so as to track with the other one. If you have only one brought to the shop, take the pitch of the broken one as near as possible and make the new one the same. If the whole of the wagon is brought to the shop, you may set the axle the same as for new work, except for allowing the new axle to be longer between the shoulder than the other one, thus making it track right.—W. G. Breckon, in American Blacksmith.

A BLACKSMITH'S AXLE SET.

The main part of the axle set, A, is made from a piece of iron 9 or 10 in. long, 1 by 2 in. on one end, and tapering down to 1¼ in. on the other end. The largest end is drilled and tapped for a 1-in. screw, B, which has a pin made on its lower end on which the block H is loosely fitted so it will remain stationary



while the screw is being turned. The block has an arc of a circle cut out to fit the axle. The small end of the main piece, A, is drilled and tapped for a ⅝-in. set screw, E. The link, D, is made from iron ⅞ or 1 in. square to fit over the axle and the bar A. The plate F is fitted on the square part of the axle to keep the set screw from denting the metal, says Blacksmith and Wheelwright. The cut plainly illustrates how an axle may be set at any angle.

ST. LOUIS VEHICLE MEN'S OUTING.

The annual summer outing of the Implement, Vehicle and Hardware Club, St. Louis, Mo., was held on June 19, on the pleasure steamer "Alton." The trip included a run up the Illinois River and the party did not return until a late hour.

Digitized by Google

PREVENTION OF WARPING, SWELLING AND SHRINKING OF WOOD.

Moisture and Wood Structure, Air Seasoning, Chemical Treatment, Peculiarities of Certain Woods, Water Soaking, Factor in Volume Changes, Final Treatment.

The most difficult problem to find an absolute answer to in connection with wood craft ever since woodworking has been a part of the affairs of mankind is that of preventing warping, swelling and shrinking. There have been various other problems of apparently more immediate importance, says C. T. Mason in Wood Craft, but this one, while we have readily diagnosed the cause, has resisted solution with a persistance not to be found in connection with any of the other problems of woodworking.

Explains Warping.

It is well known that the warping of woodwork is due to a change in dimensions by the wood adjusting itself to the moisture conditions of the air surrounding it. When moisture conditions are changed there is a change in the woodwork to harmonize therewith. Wood primarily is dependent on sap for its life, and the sap, having channels to move through during the growing process, when later evaporated during the process of drying out naturally leaves voids which readily absorb moisture when the woodwork is in the presence of moist air. If timber could be kept in the same moist condition that exists when it is cut green from the tree, it would not warp. Neither would it swell nor shrink. It is, however, in an unstable condition so far as the liquid matter in the tree is concerned because it will evaporate. It is necessary to have the wood dry to get it into the best possible workable condition. It was thought formerly that drying wood simply meant driving out the moisture constituent of the sap. This is all right if the wood is kept dry, but when it comes into the presence of moisture again it takes up a supply and swells, and continues swelling and shrinking in harmony with the moisture surrounding it for a number of years. The tendency gradually lessens as the wood grows older, perhaps from the process of the fibers of the wood settling together more closely in the course of time. It is for this reason that people in the old country keep lumber piled for a number of years before using it, especially is this the case when the stock is intended for fine cabinet work.

Various schemes of chemical treatment of wood have been devised to prevent the altering of its dimensions during the process of seasoning and later taking on moisture so that it can be depended on to retain its volume. Some of these have been impractical because of the cost, some have not stood the test of time, and some are still undergoing experiment. All the time, however, even to-day and as far back as wood has been used by men, the problem of its shrinking and drying and later taking on moisture again has been the problem that all have had to contend with. It is present in different woods in varying degrees. The woods that are notorious for warping are simply those which will alter their dimensions most from changes in the moisture conditions.

Moisture and Wood Structure.

It would hardly be a safe guide to assume that those woods containing the most water in their makeup are the ones having the worst tendencies to warp. Some woods, chestnut, for example, run very high in sap and lose an enormous lot of weight when dried out. Yet the chestnut does not warp so badly as cottonwood and gum. So it seems that the structure of the wood has an influence as well as the quantity of water contained in the sap of live timber.

One of the things that makes walnut famous as a cabinet wood—and mahogany is in the same class— is its comparative freedom from warping tendencies caused by the changing dimensions under different moisture conditions. Walnut when once thoroughly dry alters its dimensions but very little under ordinary changes of moisture conditions. The same is true of mahogany, consequently aside from their admirable color and figure they have the quality of stability of volume to recommend them to the cabinet maker. On the other hand, red gum, which has an excellent figure, has been seriously handicapped during its career because of its warping tendencies. We have solved a part of the problem and found that by making a closer study of the wood and adopting more modern ideas in seasoning we can reduce considerably the warping and swelling and shrinking tendencies, and thus in a great measure insure the permanency of joints in mill and cabinet work. The problem has never been solved absolutely, however, and is still present, requiring watchfulness at all times from the woodworker who caters to a discriminating trade.

Water Soaking .

There are several interesting ideas in connection with efforts to solve this problem, aside from the modern ones involved in up-to-date drykiln practice. One old idea is that water soaking will help cure the trouble. There is no doubt, either, that it does help some, but it doesn't eliminate the trouble entirely, and it is doubtful if the advantage gained is worth the trouble except where the logs can be kept in water in the regular order of their handling. In this connection some claim that salt water is better than fresh water, and that the sap is not only absorbed and much of the sappy substance taken out by the water but it is replaced with saline matter of value to the wood in that it aids durability. In fact it is claimed that the Japanese keep logs for several years in brackish ponds, and as a consequence their woodwork is comparatively free from warping and shrinking and leaving ugly joints. Probably this helps some and perhaps far more than we ordinarily give it credit for, yet like soaking in sea water or fresh water the remedy is only partial and is not of itself a sure remedy, because the wood may change in form with the subsequent changes in moisture conditions.

It may be that eventually there will be developed a process of chemically treating wood that is cheap enough to be practical in everyday use, and which will render it absolutely impervious to the influences of moisture; but as the situation stands to-day we can simply mitigate this trouble to a greater or less degree dependent on the attention and the amount of specific knowledge we have of the wood that is being handled. When we get right down to the really fine points of the matter we find this problem of changing in volume present in practically every material used though due to different influences. The man using iron for structural work or on railways must take into consideration the matter of expansion and contradiction or the changing of volume under different temperatures, and everywhere this very problem must be confronted. It comes in different forms and is not so readily apparent in other substances as wood nor are the other substances affected by moisture the same as wood. Still it is present in some form or other and therefore is really a sort of unsolvable problem.

The best we can do is to keep taking cognizance of it and safeguarding against it in every practical way. In woodworking the best safeguard, after careful drying and seasoning, is to keep the wood coated with some finishing material that will protect it from this probability of changing conditions in the moisture. So a whole lot of the future welfare of any wood depends materially on the man at what we term the finishing end, who puts on a coat of varnish or paint and does this in part to enhance the beauty, but frequently in finer cabinet work the more important aim is that of protecting and preserving the wood.

GETTING BETTER ACQUAINTED.

On the evening of June 10, at the Country Club, the automobile dealers of Dallas, Tex., and the local implement and vehicle men assembled for a social gathering purely for the purpose of becoming better acquainted with each other. Dinner was served the guests and no effort spared to make the occasion one of importance.

Digitized by Google

PAINTING AND UPHOLSTERING

PRIMING THE CARRIAGE.

Properties and Processes Defined.

The basis of excellent painting lies in the priming. A very wise and famous carriage painter upon being asked what made good carriage painting, replied, "good priming." We are inclined to agree with him, notwithstanding the statement of a Western manufacturer to the effect that "any one can prime a carriage." While manifestly anyone can prime the carriage, there are none too many who can do the work well. There is something more to the operation than simply "hitting all the places" with a smear of dope. This, sure enough, constitutes any one's job, but to layon and brush out and work in a good coat of prime is the task of a full fledged mechanic of ambition, and with an ideal to work up to.

First as to the primer. Of these there are many, and the main ingredient of all of them should be, if it is not, pure raw linseed oil. This furnishes the penetrative, the adhesive and the elastic property of the primer. Compactness is furnished in connection with the oil, by the pigment ingredients which should be, in the main, white keg lead deepened in color by some pigment to correspond in shade to the final color to be applied to the surface. Then, uniform consistency, another highly important quality in a primer. Develop this through the mixing processes, which should be of the most exacting and thorough kind. The mixing paddle is an indispensible factor in the painting business, and invokes an outlay of brain power as well as physical power to wield it to account.

The linseed oil should carry merely enough pigment to stain and give substance to the mass. Linseed oil used alone, as it sometimes is, penetrates rather too deeply, with the result that the outer fabric of the wood is furnished with an insufficient protection. The advised modicum of pigment checks the power of the oil for penetration, and retains enough of the tough and pliable life medium of the primer up near the air surface to furnish the basis upon which to build safely. There are numerous patent ready-to-use primers and surfacers upon the market today which may be commended as reliable and durable, but the mint and cummin of the whole matter, whether shop mixed or patent primers are employed, is found in the above described virtues. Without these, and it is the ancient story over again of building the house upon the sands.

The full development of the best that is in a primer is, however, only possible with care and skill in applying it. Use good brushes, and use them with skill, laying on and brushing out, and otherwise making a clean, uniform application of the primer. Thus we have the forerunner of good painting and finishing.

THINNING AND MIXING JAPAN GROUND COLORS.

In taking any japan ground color from the can, first with an oval shaped paddle mash and mix up the pigment completely before adding the turpentine. To slosh in a mass of "turps" and then attempt to beat the color into this brings forth a lumpy and flaky pigment, to use which the most cunning workman is baffled. Having the color crushed and broken down, add the turpentine gradually, thus bringing the mass by easy stages to that smooth, fine, uniform consistency so indispensible in carriage work. When the color is thus manipulated, and brought perfectly to a fluid state, add the necessary, if so considered, quota of oil. Some color grinders say no oil or varnish should be added to the color. Others advise a little oil, and with this latter class the writer desires to be grouped. But in all cases the addition of oil should be regulated to a definite quantity. "A little oil" is dangerous, because the term is indefinite. In medical practice "a little" has killed not a few patients. For surfaces not coated with a surface or preparatory material, one part oil to five parts turpentine will do nicely for color that may stand over night before re-coating. For surfaces reinforced with a preparation coat use one part oil to anywhere from ten to a dozen parts turpentine in the color to stand over night. For colors to be recoated within five or six hours, use one part oil to thirty parts turpentine.

PROCESSES OF PRESERVATION OF CARRIAGE TOP.

A correspondent of The Hub writes for information concerning the best means for keeping the carriage top in order, and supplementary to what we have stated in earlier issues, it may be said that the carriage top should have treatment given it as befits its condition and as best meeting the character of service to which it is exposed. Beyond this it should be left severely alone. It is possible—easily possible, we may say—to overdo this matter of fussing with and apply nostrums to the top, and especially to the leather top. Like the habit of greasing one's' boots, this administering dope to the top at stated intervals, regardless of condition or previous manner of servitude, is more often harmful than beneficial.

The painter is often moved to recommend dressing the top through motives of gain rather than because of any existing necessity arising from its condition. This, however, is a twofold unfortunate policy, and should never be resorted to. In the first place, the top should be carefully examined at the time of receiving the carriage, and if not encrusted with highway accumulations, recommendations concerning its condition and needs ought to be furnished the owner then and there.

Even the rubber top, if retaining its enamel and some show of its original shimmer, may go best by sponging off with a little clean tepid water into which some castile soap has been rubbed. If the enamel shows a dry, parched condition, with a bit of frayed appearance, cut an ounce of beeswax with pure turpentine. Into elastic finishing varnish, quality one-fourth gallon, whip the dissolved beeswax thoroughly, add enough drop black to cast the mixture to the right stain of color, and then further add turpentine to bring all to the right brushing consistency. Rub this mixture over the rubber with a soft tuft of cotton goods, and polish up with a piece of woolen. This preparation is equally beneficial to leather.

In case the enamel is considerably worn, or gone to an even worse condition, apply a light, thin coat of any standard top dressing to be bought ready for application. Or, if preferred, make the dressing of one-eighth gallon of asphaltum, liquid form, one-eighth gallon elastic body finishing varnish, one-sixteenth gallon of best quality boiled linseed oil, one-sixteenth gallon pale drying japan, and one-fourth pound of coach black. Put these ingredients in a varnish can, shake all together vigorously to secure complete incorporation of all the parts, and stand aside for ten hours to settle and mature before using. Always apply a thin coat of the dressing, which may be used both upon rubber and leather, if desired.

The hand buffed leather top, so long as its enamel remains unimpaired, is doing plenty good enough without any dressing. An occasional washing of the leather with castile soap, or with an

Digitized by Google

oil soap in which the oil counteracts the activity of the alkali, will serve to remove any injurious substances accumulated during service. Cleanliness will keep the top elastic, and responsive to the ordinary, and, when the test comes, the extraordinary demands imposed upon it.

When the enamel has fractured and worn down close, and in many places worn away altogether, the leather needs something to both restore and preserve it. Cleanse off the leather first with the castile soap and water. Dry off with a soft woolen cloth. Melt two ounces of beef suet in a scant pint of neatsfoot oil, after which darken with drop black. Then take a kernel of beeswax the size of a crow's egg, melt and add same to the oil and suet, mix thoroughly and apply with a cotton cloth saturated with the material, rubbing the dressing on smooth and uniform. Apply about every four or five months.

A BLACK FINISH.

Some of the Essentials Briefly Told.

Of other colors and how they are applied, and finished chapters without number have been written. Why not something about that black finish? It is not an easy matter, after all, to build up and round out with a superb finish a plain black surface. Black surfaces vary greatly in their brilliancy of color, tone and general appearance. The black that covers best, and has therefore the greatest opacity or density, will invariably show less brilliancy of tone and a general dullness of appearance, as compared with the more transparent color. The regulation black is a color which shows defects readily, hence the primary surfacing made to be well done. Coming to the preparation and application of the color, whip the color in turpentine to a rather thin consistency and apply to the surface, using, if necessary, an extra coat of color to obtain the necessary solidity. Then start from this with a coat of varnish color, using this medium to intensify and more fully establish the midnight shade of the pigment. Into the next coat of rubbing varnish use in, say, a pint of varnish an ounce of black, and for the following coat of rubbing varnish reduce the quantity of black by one-half. When striping is applied omit the color from the final coat of rubbing, but observe all other precautions to insure a pure black finish.

PAINTING AND FINISHING BLUE SURFACES.

A Review of Various Methods.

Black surfaces continue popular both in carriage and wagon painting, despite the difficulties encountered in bringing them through to a finish. Light blues are the easier members of the royal family to bring out in their blooming purity of tone with a flow of varnish over them. All blues are injured by the varnish cast over them, the dark blues being the most disastrously affected. To counteract this tendency various expedients are resorted to, but none are so effectual as the one which provides for the use of a certain quantity of pigment in each coat of varnish, barring the final coat of rubbing. The ultramarine blues still retain their supremacy for beauty and richness of color, as they have done for many years. For a deep rich blue, the most difficult of all to develop in its full rich tone, bring the surface up without blemish, and when the surfacing processes have been completed satisfactorily, lay on as a preparatory ground, a coat of refined lampblack, thinned free and fine with turpentine, and carrying a dozen drops of raw linseed oil to a pint of thinned color. This will permit the black to dry out dead flat, which it should always be made to do.

Then reduce some of the blue to a color working consistency with turpentine, and with a camel's hair brush apply to the surface. This, like its ground, will flat out "dead." Then into a pound of elastic rubbing varnish stir intimately three ounces of the blue, which should first be thinned with turpentine. Thinning the pigment with turpentine before adding it to the varnish produces a smooth working and uniform varnish color. Lay on a full rich coat of this material, and before rubbing allow it plenty of time to dry. Rub lightly on this coat, clean up and apply a second coat of the varnish color, reducing, however, the quantity of blue by one-half. Again freely flow on the pigment, and again, in due time, rub out, giving this second coat a rather close, hard rub. For a high class job, apply a third coat of the varnish color, but cut the quantity of color down to an ounce of blue to a full pint of varnish.

For a medium grade job rub, stripe and apply a coat of clear rubbing varnish. Then rub this coat strong and close, when dry, and finish with the palest body finishing varnish obtainable. If the striping could be eliminated upon these blue fields, which, of course, to the exacting public is inconceivable, and the blue varnish color used directly up to receiving the finishing coat of varnish the permanency and brilliancy of the surfaces would be greatly strengthened.

to forestall the discoloring propensity. A ground color made up of good pigments will act less upon the blue placed above it than a ground fabric of cheap and shoddy material fired with chemically vicious ingredients. Having established this ground in its full strength the subsequent processes may very properly be duplicates of those above described.

The first coat of the blue should invariably be a flat or "dead" appearing one. When the varnish color is flowed over such a ground, it will penetrate and catch into the flat coat of blue beneath, bringing out all the native brilliancy of the color. In rubbing any of the blue surfaces use sparingly of the pumice stone, but bountifully of the water. Blue is a most delicate and sensitive color and it requires a treatment of like nature.

BILL OF LADING RULINGS.

The following bill of lading rulings by the Interstate Commerce Commission are of interest to shippers:

"A bill of lading showed both a rate and a route, but the rate did not apply over the route named. Held: That in all such cases the shipment should be forwarded via the route over which the stated rate applies unless the rate via the specified route makes lower, in which event the specified routing must be followed."

"A carrier's tariff provided higher rates on shipments not tendered with a uniform bill of lading. Held: That the tender of a shipment accompanied by other than a uniform bill of lading may not be taken by the carrier as evidence of the shipper's election to use the higher rate. The carrier must direct his attention to the fact that a lower rate is available under the uniform bill of lading."

The Commission has made a further ruling on claims for misrouting of freight, as follows:

"If, under this rule, a carrier adjusts a claim for misrouting, and later learns that the responsibility for misrouting actually rests upon another carrier, such other carrier may voluntarily reimburse the carrier that made the payment in the full amount of such payment, or the matter may, if necessary, be referred to the Commission for determination of the question of which carrier is responsible for the error.

PERSONAL.

H. F. Cartwright, vice-president of the Banner Buggy Co., St. Louis, Mo., and Miss Stella Robertson, of Mexico, Mo., will be married early in October, according to announcement which has just been made. The ceremony will be performed at the home of the bride.

Agency for the Standard Wheel Co., of Terre Haute, Ind., has been placed in St. Louis with George B. Ogan, manufacturers' agent.

Digitized by Google

LITTLE CHANGE IN WHEELS SINCE THE DAYS OF OLD.

Egyptians Used Chariot Wheels Containing All Our Ideas—Remarkable Features of Ancient Chariot Taken From a Tomb.

James Arthur, of Brooklyn, has prepared an interesting article on ancient chariot wheels. If there is any branch of mechanical construction in which we feel sure of our modern advance it is carriage wheels; yet, says Mr. Arthur(the Egyptians of 1400 B. C. used chariot wheels containing nearly all our improvements. It is almost certain that they made bent rim wheels with metal hubs and elastic tires long before that date. In the Cairo museum, that most wonderful collection of Egyptian antiquities, may be seen an ancient (funerary) chariot taken from the tomb of Iouiya and Touiyou about three years ago by Theodore M. Davis, an American, who uses his time and wealth in advancing human knowledge by excavations in Egypt.

The wheels of this chariot are 30 inches in diameter and have bent rims in two pieces, as shown in the accompanying diagram, but the two pieces are not halves, as we make them. One of the pieces is about seven-eighths of a circle; the other (AA) being one-eighth.

"This is a most remarkable feature," says Mr. Arthur, "and we are left to theorize as to its meaning. My guess is that the builder conceived the idea of a bent rim in one piece, but failed to make a satisfactory joint and then put in the short section. The spokes are apparently without tenons, but are set into the rim full size, just far enough to give a bearing for the end of the spoke, as shown in enlarged Figure 2 at G. Practically, a rim of seven-eighths, the circle could not be sprung over spoke tenons; hence the necessity of the shallow entrance at G. The two joints of the rim are strengthened by the straps of bronze (AA), just as we do to-day on light rims. The tire has a base of leather over which a heavy leather band (F) is laced, and over this, a fine leather band (E) like parchment, is also laced. The hub is very long (about 16 inches) and is covered with bronze about as thick as a 10-cent coil.

"The spokes are a beautiful shape, about 1⅛ x ⅞, but not exactly elliptical in section. They have shrunk a little. This adds to the impressiveness of the work, as it shows the spoke entering the metal hub. The curves, C. C., of this hub could not be improved. The linchpin has a hole in lower end in which a leather thong, D, is tied. To this day that is the simplest and best method of preventing a carriage or cart from 'throwing the linchpin.' Axle, H, is wood and fastened to rear of the body by bronze bands. The horseshoe shaped rail of the chariot body is bent wood, fastened at joints with bronze straps. The floor of the chariot is made of leather bands ¾ inch wide, woven like our cane bottom chairs. The rider stands on this floor and has its elasticity along with that of the leather tires.

"This wonderful chariot is complete with a long pole, and is kept under an immense glass case which has no doors. This case would require about eight men to lift it off, so there is no danger of visitors tampering with the exhibit.

"How are the curves, C C, formed? Worked on the spokes or the hubs, or both, or blocked in and worked on the blocking? I was unable to determine this and probably it is not known, as covering of hubs appears intact and undisturbed. In a conversation with Brugsch Pasha, director general of the Cairo Museum, he informed me that all straps were imitation bronze—no metal in the chariot. This only adds to our wonder, for the imitation must be of chariots still older which were bronze trimmed. Remember, this is a "funerary" chariot, and that is just the reason we have it; for the metal bound chariots for actual service were used up and have disappeared, while this one was safe in the rock hewn tomb. Still more, what material is this imitation bronze, which would deceive any human being unless at liberty to test it with file and knife? The hub looks as solid, smooth and free from cracks as the finest casting and the general color and "tone" is that of old, rich bronze.

"In the Metropolitan Museum of Art may be seen the now famous Etruscan chariot taken from a tomb in Italy. As this article is primarily about wheels, the remarkable art work on this chariot is merely referred to here. These wheels are about 30 inches in diameter and have noticeably long hubs, about 24 inches. The rims are 3 1-3 inches deep; so it is pretty safe to assume that they are built in sections, or 'felloes,' and not bent. They have nine spokes of circular section, tapering from 1¼ inches at hub to 1 inch at rim. These wheels are totally covered with thin bronze plates and show extraordinary skill in hammering, fitting and brazing the plates over the woodwork. They have iron tires or hoops about 1¼ inches by ½ inch, large

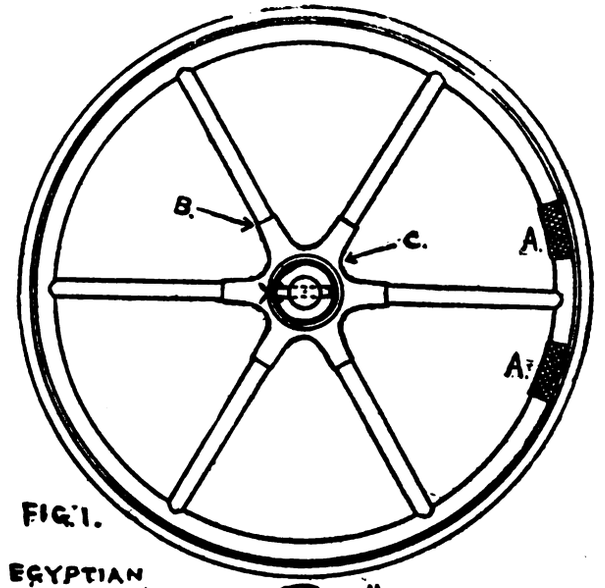


FIG. 1.
EGYPTIAN CHARIOT 1400 B.C.

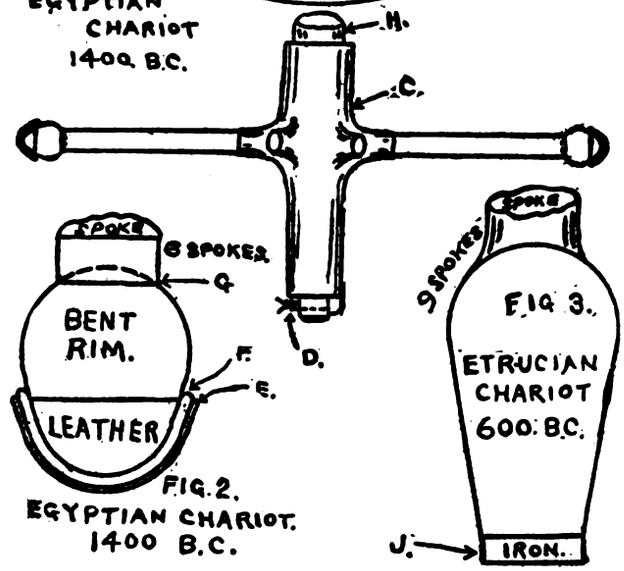


FIG. 2.
EGYPTIAN CHARIOT. 1400 B.C.

portions of which have rusted totally off. These rims are of oval section as shown in Fig. 3, J being the iron hoop. These wheels are of 600 B. C., and it is a remarkable feature that the wheels taken from the ruins of Pompeii, as well as those used to-day in the streets of Naples, have this form of deep rim, with narrow tire and long hub. In other words, the regular, every-day wheels in Italy are substantially the same for 2,500 years. Also in the Metropolitan is a processional car' in bronze, having four wheels about 10 inches in diameter and seven spokes, date about 200 of our own era. The pertinent question is, What have we invented in vehicle wheels? I venture to answer: Not enough to boast about!

"Now, about the number of spokes in these Etruscan and Roman wheels. It is hardly necessary to point out that these 'odd' numbers, 9 and 7, must have been intentionally chosen,

Digitized by Google

because it is more difficult to build odd numbers than even. That is, the builders took trouble to build odd numbers in their wheels. Evidently this question has not been much considered, as I was unable to get anything definite from museum authorities beyond the general statement that during a certain Grecian period odd numbers were general; but the reason is what I have been trying to find. A friend who knows something about science and mythology suggests 'three times three' for the nine spokes; for the seven spokes, the sacred number of days in our week, and the 'seven' and 'seventy times seven' of the New Testament seem sufficient; for we must remember that this Etruscan chariot, as well as the Roman processional car, was built for religious processions. Finally, to those who might wish to go into this odd number matter a little deeper, I might say that I have a 'Sobba,' or set of Mohammedan prayer beads, purchased in Constantinople, consisting of three sections, the string being three times thirty-three, making a total of ninety-nine beads; all of which is strictly to my text—'Chariot Wheels'—and to many it may be more interesting than the mechanical part of the subject."

TO PREVENT LOSS OR DAMAGE.

In a freight book issued by the Canadian Freight Association, the following suggestions are offered:

"Shippers and consignees blame the carrier when a shipment of freight fails to reach destination or is delivered to consignee in a damaged condition. But a small number stop to think it is more their fault than the carrier's. In the beginning, the fundamental rule of carriers in accepting merchandise was the requiring of each package to be plainly marked, showing full name of consignee and destination. From a willingness to oblige patrons this vital requirement has been so far 'side tracked,' so to speak, that it is not unusual for boxes, bales, bundles and pieces to be accepted without any marks.

"Coupled to the disappearance of full marks came the gradual decline in the strength of packages in which goods are shipped. Boxes and sacks are made of thinner material, crates are substituted for boxes, and sacks are now being used by some shippers for articles which should not be shipped in them.

"To insure the prompt and safe delivery of goods, it is necessary for the shipper to plainly mark each and every package, bundle or piece of any less than carload shipment, showing this information: Consignee's name in full; bill of lading destination in full; state in which destination is located; if more than one station in same state of same name, full name of county must be shown; all previous shipping marks must be obliterated.

"The name of consignee and destination must be legibly written or stenciled, and as far away from any other writing or marks as possible. It is a great help to all when shipper's name and location are also shown, with the word 'from' preceding them.

"Every package, bundle or piece offered for shipment should be presented to carrier in condition to stand the wear and tear not only via all rail routes, but also the additional handling incidental to transportation via rail and water routes."

GOES WITH THE VICTOR RUBBER CO.

Carl P. Cartwell, for severals year past connected with the Derby (Conn.) Rubber Co., has joined the selling forces of the Victor Rubber Co., at Springfield, Ohio.

IMPLEMENT EXPORTS.

Implement exports for March were in value $4,282,048, compared with $3,752,605 for March, 1908. For the nine months of the current fiscal year the value of implements exported was $18,339,062, compared with $17,209,034 for the corresponding period of last year.

CONSTRUCTING A SIXTH STORY.

Work is being started on the construction of a sixth story for the second largest of the buildings at the automobile works of the H. H. Franklin Manufacturing Company, in Syracuse, N. Y. This structure extends west from the main building, and its five floors provide respectively for one of the machine shops, the final assembly department, the engine assembly department the wood shop and the paint shop.

It is for the purpose of doubling the capacity of the paint shop, situated on the top floor of the structure as it stands today, that the sixth story is to be added. The work is to be completed in about six weks.

The floor space will be increased by 15,900 square feet, as the building is 265 feet long and 60 feet wide. This will make a total factory floor space of nearly 300,000 square feet.

PROMINENT FAIRS OF 1909.

Alabama (state), Birmingham, October 11-20.
Arkansas (state), Hot Springs, October 7-16.
California (state), Sacramento, August 28-September 4.
Colorado (interstate), Denver, September 12-18.
Connecticut (Danbury), Danbury, October 4-9.
Georgia (state), Macon, October 27-November 6.
Idaho (Lewiston-Clarkston), Lewiston, September 27- October 2.
Illinois (state), Springfield, October 1-9.
Indiana (state), Indianapolis, September 6-10.
Iowa (state), Des Moines, August 27-September 3.
Kansas (state), Hutchinson, September 11-17.
Kansas ("state wide"), Topeka, September 13-18.
Kentucky (state), Louisville, September 13-18.
Kentucky (Blue Grass), Lexington, August 9-14.
Louisiana (state), Shreveport, November 1-6.
Maine (eastern), Bangor, August 24-27.
Maryland (state), Timonium, September 7-11.
Massachusetts (New England), Worcester, September 6-9.
Michigan (state), Detroit, September 2-10.
Michigan (West Michigan), Grand Rapids, September 13-17.
Minnesota (state), Hamline, September 6-11.
Missouri (state), Sedalia, October 2-8.
Mississippi (state), Jackson, October 26-November 5.
Montana (state), Helena, September 27-October 2.
Nebraska (state), Lincoln, September 6-10.
New Jersey (interstate), Trenton, September 27-October 1.
New York (state), Syracuse, September 13-18.
North Carolina (state), Raleigh, October 18-23.
North Dakota (state), Grand Forks, July 20-24.
Ohio (state), Columbus, August 30-September 3.
Oklahoma (state), Oklahoma City, September 29-October 8.
Oregon (state), Salem, September 13-18.
Pennsylvania (state), Bethlehem, September 7-10.
Pennsylvania (Allentown), Allentown, September 21-24.
South Carolina (state), Columbia, November 1-6.
South Dakota (state), Huron, September 13-18.
Tennessee (state), Nashville, September 20-25.
Tennessee (Tri-State), Memphis, October 5-14.
Texas (state), Dallas, October 16-31.
Utah (state), Salt Lake City, October 4-9.
Virginia (state), Richmond, October 4-9.
Washington (interstate), Spokane, September 20-25.
West Virginia (state), Wheeling, September 6-10.
West Virginia (West Virginia), Parkersburg, August 16-20.
Wisconsin (state), Milwaukee, September 13-17.

Leading Canadian Fairs of 1909.

Alberta Provincial, Calgary, July 5-10.
Canadian National, Toronto, August 28-September 13.
Central Canada, Ottawa, September 10-18.
Inter-Provincial, Brandon, July 19-23.
Provincial Exhibition, Victoria, September 20-25.
Winnipeg Industrial, Winnipeg, July 10-17.

Digitized by Google

SPECIAL TRADE NEWS FROM MICHIGAN

Newsy Notes by our Correspondent Concerning Well Known Carriage and Automobile Manufacturers in the Wolverine State.

New Attachment for Steamers.—An invention which probably means much to the development of the steam automobile has recently been perfected and was granted a patent, John D. MacLachlan, of Detroit, being the patentee. The device is an automatic regulator for feeding water to flash boilers used in steam automobiles. It is said that the attachment is one that makes the generation of steam easier and thus adds to the efficiency of the steam automobile. Mr. MacLachlan recently has devoted much time to the development of steam as a means of propelling ordinary vehicles. He has improved the flash boilers and it is his intention to have his device placed in some popular car to test its efficiency.

Its First Machine.—After several weeks' work, the Duplex Auto Truck Co., of Charlotte, has completed its first delivery wagon. This company, which got an option on the Dolson auto plant a few weeks ago has employed a few men since and under the personal supervision of Francis A. Messler, the promoter of the new concern, and W. L. Cummings, an experienced man in the automobile business, they have produced their first car. It is more of a success than either of these gentlemen anticipated.

Five a Week.—The Reliance Motor Truck Co., of Owosso, is now urning out trucks at the rate of five a week. At this rate, one-quarter of the orders that are flowing in can be filled.

Outing for Vehicle Workers.—The annual vehicle workers' excursion will be run from Flint, Saturday, July 24, the occasion being the sixth outing of that body. Plans are being made this season for the largest and best ever. Three trains and the big steel steamer, Greyhound, will carry the crowds.

"Lift Vans."—The "lift van" is the newest vehicle of transportation in Detroit, being the latest device for handling removals of household goods, or shipping valuable art works from one country to another. The vans were initiated by the Bowling Green Van Co., and 100 of them have been put into commission. On the top of the van, which is, in reality, a huge steel box, are hooks and rings by means of which it is hoisted on and off of flat cars and trucks. In the instance of some art works being shipped to Detroit from Paris, in one of these vans, the load costs $500.

Steel Wheel Maker Looking for Site.—Harry J. Fish, who is at the head of the Indestructible Steel Wheel Co., of Lebanon, Ind., recently spent several days in Pontiac, and his mission is said to have been important to that city, its significance being the possibility of his establishing a factory there. Not only is he said to be much impressed with the shipping facilities of Pontiac, but the Rapid Motor Co. is one of the heaviest purchasers of the wheels manufactured by his company. The brick building, formerly used by the Hodges vehicle manufacturers is available as a factory location and is said to be favorably looked upon by Mr. Fish. Morris Grabowsky, of the Rapid Motor Car Co., says that his concern is doing all it can to get Mr. Fish to locate a factory there. There are several places in Indiana and Illinois that are trying to land it.

Wants Streets Closed to Enlarge Plant.—The Reliance Motor Truck Co., of Owosso, has asked the council of that city to close Howard street in that city for three blocks and Michigan avenue for one block, that it may enlarge its plant. It is said that the factory will be made about five times its present size and that when completed it will employ about 4,000 hands.

Mr. Chalfant Will Move to Detroit.—E. P. Chalfant is to transfer his base of operations from New York City to Detroit, to become one of the big cogwheels in the well-planned machinery of the Packard Motor Car Co. Mr. Chalfant's resignation as general manager of the Association of Licensed Automobile Manufacturers was received with regret.

New Superintendent for Demotor Co.—George Homeir, formerly superintendent of the Buick Motor Car Co., at Flint, has accepted the position of superintendent of The Demotor Car Co., of Detroit, and will locate there.

Properly Labelled for Rochester.—G. W. Sneedan, for the last eighteen months superintendent of the Jackson Automobile Co., and previous to that with the Buick concern, has left for Rochester, N. Y., where he has accepted a position with the Selden Motor Car Co. Just before his departure from Jackson, his associates at the factory presented to him a gold link watch fob.

Orders Receiver to Sell Standard Vehicle Plant.—Judge George Smith, of the circuit court at Pontiac, has issued an order asking Receiver C. V. Taylor, of the Standard Vehicle Co., to file his final account immediately and sell all the remaining accounts of the insolvent company at public auction forthwith. The order was in accordance with the wishes of the stockholders, who met and reported to the court.

Remodeling Factory and Adding Help to Meet Demand.—Contracts have been closed in Flint between the Omega Separator Co., of Lansing, and the General Motors Co., for the manufacture and finishing of thousands of small parts for automobiles. To take care of the work, the Omega company has had to start remodelling the interior of its factory. A hundred and fifty additional mechanics are being put on the work. The company is completing 1,500 valve cages daily, on orders for 350,000, and large numbers of transmission gears and other small parts are included in the contract with the General Motors Co.

Will Move to Jackson from Indianapolis.—The American Gear & Manufacturing Co., of Indianapolis, is arranging for the removal of its entire plant to Jackson. A good factory site has been secured near the Lewis plant and a building 66 x 250, of brick, or cement, will be erected as soon as possible. The American Gear & Manufacturing Co. has D. K. Moore, of Cleveland, as president; C. G. McCutcheon, of Indianapolis, as vice-president, and F. W. Gay, also of Indianapolis, as secretary and treasurer. The capital stock of the concern is now $100,000, but in moving out of Indiana it proposes to surrender its Hoosier charter and reorganize under Michigan laws.

New Auto Top Concern.—The Pontiac Auto Top Co. is the name of a new concern in Pontiac. The stockholders are: C. V. Taylor, O. J. Beaudette and P. F. Monroe. Mr. Taylor will assume the management of the plant, which is to be established in the old phaeton factory in Willow avenue. Automobile tops will be manufactured exclusively, orders for a large quantity already being on file. All the orders thus far are for outside automobile concerns. The company plans to have the business well established this year and to be in shape to land some huge contracts for next season. If the present plans materialize, the company will have a force of 100 men at work at the opening of another season.

Digitized by Google

Will Put 500 More to Work.—The Weston-Mott Co., of Flint, already employing 800 men, intend to put 500 more at work in the new addition to the factory that is to be ready by the middle of July. The enlargement of the plant will practically double the company's present facilities. A number of its new hands will come from Columbus, Ohio.

Will Spend $500,000 on Buildings this Year.—The Welch Co., of Detroit, has filed articles of association with the county clerk, to manufacture motors, motor cars and motor boats. Of the $250,000 capital, $25,000 is paid in cash and the rest is represented by machinery, etc. The incorporators named are: A. R. Welch, Fred S. Welch and Arthur Pack, all of Pontiac; W. L. Fletcher, of Bay City, and Fred T. Moran and James H. Swart, of Detroit. The Welch Company will build a factory on Jefferson avenue on the site of the old Oldsmobile plant, adjacent to the factory of the Detroit Stove Co. The plant will have a capacity of 1,500 cars a year. The new concern will not conflict with the present Welch Motor Co., doing business in Pontiac, the highest class cars being built at that factory, while the Detroit plant will manufacture a cheaper car. It is estimated that upwards of $500,000 will be expended by the Detroit company in its building operations this year.

Orders for 1910 Exceeding Capacity.—According to the present outlook, the number of orders received for the 1910 four-cylinder Reo touring cars will exceed the capacity of the plant. Work on the new buildings is progressing rapidly.

Will Employ Fifty Hands.—The Escanaba Veneer Co.'s factory is now under construction. The main building will be 216 by 80 feet, with a wing 35 by 95 feet. It is expected that the plant will be in active operation by August 1. The factory will employ fifty hands at the start and the output will be extended as the demand arises.

Big Order for Buggy Crates.—Although this is supposed to be the dull season in the box business, the Michigan Manufacturing & Lumber Co., of Holly, is rushed with orders and is meeting with trouble in finding enough men to turn out orders. This company recently received orders from the Durant-Dort Carriage Co., of Flint, for thirty-five cars of buggy crates, in addition to a rush of other orders.

Carriage Company to Build Another Garage.—The Anderson Carriage Co., of Detroit, has had such a large measure of success with its electric automobile since it began to build the Detroit Electric, that another modern garage, exclusively for electrics, is being constructed for it on East Grand boulevard, just off Jefferson avenue, near the approach to the Belle Isle bridge. The building will be 60 feet wide by 120 feet deep. Harry Stevenson, who has been associated with the Detroit Electric sales department for some time, will manage the new garage and handle the sales end of the business.

Flint Wagon Works to Make Autos.—The Flint Wagon Works has been experimenting for several months and has completed half a dozen or more machines which have proved very satisfactory, and now announce that it will enter the auto manufacturing field and will put out a complete line of cars in 1910. The company is one of the pioneer carriage and wagon factories of Michigan and will not forsake that field when the work of making automobiles is taken up in earnest.

Making Auto Wind Shields.—The Cartier-Chapman Co., of Ludington, is now making an automobile wind shield which makes special claim to recognition because of a folding device. This company was established in Februuary of 1905 and its principal articles of manufacture are sleighs and wagons, shafts and poles. Though the industry is quite young, its annual output averages approximately $26,000.

NEW AXLE COMPANY.

Timken-Detroit Axle Company to Manufacture Automobile Axles.

The Timken-Detroit Axe Company has recently been incorporated with $1,000,000 capital, to manufacture automobile axles in Detroit, Mich. Heretofore the Timken Roller Bearing Axle Company, of Canton, Ohio, has made automobile axles in connection with their roller bearings, and the above new company was formed to take over the automobile axle business of the latter, and it will devote itself to the automobile axle business solely. The Timken Roller Bearing Axle Company will control the new company.

Large and modern buildings, located on Clark avenue and Pere Marquette R. R., were secured a few months ago and have been made ready for occupancy. The drop forge plant, in connection, has been largely increased and other improvements made. All the buildings are equipped with automatic sprinklers. A large amount of new machinery has been purchased and put in place, and the new company will be equipped in a manner to take care of its business to the best possible advantage. Their output of automobile axles will be one of the largest in the country.

The officers of the Timken-Detroit Axle Company are: W. R. Timken, president; H. H. Timken, vice-president; A. R. Demory, second vice-president and factory manager; E. W. Lewis, secretary and treasurer; H. W. Alden, chief engineer; F. C. Gilbert, assistant secretary, and W. H. H. Hutton, Jr., purchasing agent. The active management will be in the hands of Messrs. Demory, Lewis and Alden. Active operations have already begun, and in July the new company will be turning out its product.

With ample facilities and sufficient capital, together with a large booking of business for season of 1910, the success of the company is assured from its start.

The Timken Roller Bearing Axle Co. will change its name to The Timken Roller Bearing Company, and continue to manufacture, at Canton, Ohio, roller bearings only. A continuous and increase demand, owing to popularity as a result of merit and satisfaction, will necessitate an enlarged output, and they are now putting in machinery that will give them an increased output of over 100 per cent. The entire factory that heretofore has been used for the manufacture of axles and roller bearings will be devoted to Timken roller bearings and axles only. This is the fifth time the business has been doubled in the past seven years.

TAKES CHARGE OF PNEUMATIC TIRE DEPARTMENT.

Mr. Charles Stein, of the Stein Double Cushion Tire Co., of Akron, Ohio, who is universally known as one of the expert rubber tire men of the country, and who has invented a number of improvements for the construction of solid tires, is now taking full charge of the peneumatic tire department of his company, and will spend the greater portion of his time placing agencies throughout the country.

The Stein pneumatic auto tire, which he invented and patented, has been placed on the market, after being tested for the last three years, under all conditions. Its marked improvements in construction, have overcome all the petty annoyances which have been thorns in the side of the auto user. The tire, for the short time it has been on the market, has met with phenomenal success.

Two Goodyear endless motor truck tires used on one of the heavy 'buses in Fifth avenue, New York, are reported to have stood up respectively under 21,664 miles and 18,924 miles of usage. These 'buses are heavy vehicles adapted to carrying up to thirty passengers.

Digitized by Google

Among the Manufacturers

Sell Assets of Electric Vehicle Co.—Judge Rellstab, in the United States District Court at Trenton, June 14, made an order authorizing the receivers of the Electric Vehicle Company, of Hartford, Conn., to dispose of the assets of the company to a reorganization committee for $400,000.

Purchased an Interest.—James Hudson, of Chattanooga, Tenn., has purchased an interest in the firm of John Lewis & Sons, wagon and buggy manufacturers at Greensboro, N. C. Mr. Hudson has been engaged in the buggy and wagon business in Chattanooga.

Hub and Spoke Works for Jasper, Ala.—Mr. Mummell, of Missouri, it is claimed, will start a hub and spoke works at Jasper, Mo.

Trebling Its Capacity.—The Washington (N. C.) Buggy Company, which about a year ago started in a very modest way, in a small building 60 x 95 feet, and only two stories high, are about to commence the erection of a modern factory plant to be 200 x 78 feet. It has purchased ten acres of ground, on which it will build. The factory will contain 450,000 bricks, and will be three stories high. The present quarters have only a capacity of 1,000 buggies per year, while the new plant will, with ease, turn out over 3,000 vehicles per year. It will employ about one hundred people.

Made a Sale in the Holy City.—Presideit J. G. Anderson, of the Rock Hill (S. C.) Buggy Company, who is now traveling in foreign lands, has sent his concern an order from Jerusalem for vehicles for a dealer there. This company has already sent orders to Holland and to South Africa.

Celebrated Golden Anniversary.—The Charles Behlen Sons Co., of Cininnati, Ohio, celebrated the fiftieth anniversary of its founding on June 8.

Prosperity Strikes Indiana Town.—The Rex Buggy Company, of Connersville, Ind., closed a contract with the Rock Island Plow Company for $600,000 worth of vehicles, the order being the largest ever received by a Connersville buggy manufacturer. Besides the Rex the order means business for local spring, axle and wheel concerns.

Cannot Improve the Goods, So It Improves the Name.—The Muncie (Ind.) Wheel & Jobbing Co. has asked the court to allow it to change its name to the Muncie Wheel Co.

Will Move to Newark, N. Y.—The Haywood Wagon Co., of Baldwinsville will move its plant to Newark, N. Y., as soon as the buildings can be erected. Sufficient money to purchase ground and erect buildings at Newark was the inducement. The factory, track and sheds will occupy a space 400 by 800 feet.

Cannot Use the Name.—The Horton Wagon Mfg. Co., of Augusta, Ga., has secured a permanent injunction from the court restraining the Horton Wagon Co. from using that name on the ground that it was too much like their own name and caused the mail to be mixed.

A New $10,000 Building.—Work is about to begin on the new building of Walker & Wrenn, on Fayette street between Adams and Washington, in Peoria, Ill., which will cost $10,000.

To Construct Addition.—The contract for the construction of the addition to the Gerstenshlager Buggy Company factory, at Wooster, Ohio, has been let. Work will not start until some time in September.

Expecting a Boom in the Lamp Business.—The Newark, N. J., carriage lamp manufacturers anticipate a greatly increased demand for their product when the new law compelling all vehicles to carry lights goes into effect on July 4. While the demand created by the motor car manufacturers for lamps has kept that industry busy even during the dull times of the autumn and winter, the new business which it is believed will follow the enforcement of the law, will give additional life and stimulus to trade.

To Be Finished this Summer.—Work of excavating for a new addition by the Wisconsin Carriage Company, at Janesville, Wis., is to be rushed, and the addition will be completed and pressed into use some time this summer.

Selden Plant to Expand.—A transfer of real estate in Probert street, Rochester, N. Y., from Anna Gould to the Selden Motor Vehicle Company, indicates an important expansion of a large Rochester industry. The factory is now in North avenue, but the company has outgrown it and plans a new and modern building. Ground will be broken for the big building within a few weeks.

New Buggy Factory for Chase City.—A new buggy factory will be opened at Chase City, Va., shortly for the manufacture of high grade buggies in the building formerly occupied by the Chase City Canning Company.

Large Orders for Bodies.—The LaPorte (Pa.) Carriage Company recently received an order from a Detroit automobile concern for 250 touring bodies. As the bodies will be painted and upholstered, it will give work in every department in the LaPorte plant.

CARRIAGE MAN PRESIDENT OF THE N. A. C. M.

The fourteenth annual convention of the National Association of Credit Men was held in Philadelphia June 15 to 18, inclusive. Many men prominent in the business circles of the country were present, coming from all sections of the United States.

Among the delegates was a fair representation of carriage, automobile and accessory men. O. H. Perry, treasurer, Columbus Buggy Co., of Columbus, Ohio, being chairman of the mercantile agencies committee.

At the election of officers on Friday, F. H. McAdow, secretary and treasurer of the Staver Carriage Co., Chicago, was unanimously elected president of the organization. Harry New, Cleveland, Ohio, was elected to the office of first vice-president: William R. King, second vice-president. The number of votes polled was 11,185 in each instance.

IN BETTER SHAPE THAN EVER.

The Henderson-Hull Co., Savannah, Ga., now have their plant in full operation, the repairs made necessary by the cyclone of May 1 having been completed. While making these necessary repairs advantage was taken of the opportunity to add some improvements to the buildings. While the plant was closed orders continued to come in as usual, and as a result the plant is now pushed to its utmost capacity. The improvements made will enable a larger volume of work to be turned out than before.

One of the most valuable betterments in the plant was the establishment of rooms for gear and wheel painting and finishing, which are absolutely dust-proof, and the paint room equipment is probably unsurpassed.

HONORS FOR STAVER TRAVELER.

Lloyd R. Maxwell, general traveler for the Staver Company, whose home is in Iowa, was elected president of the Iowa Elks, at the convention held in Dubuque.

Digitized by Google

LARGEST BUGGY PLANT IN WORLD IS PLANNED.

Moline Plow Co. Expects to Make Such Additions to Its Factories in Freeport as Will Bring About This—Will Begin Building at Once.

It is the ambition of the Moline Plow Co. to possess the largest buggy factory in the world. With this end in view, which the firm hopes to ultimately bring about, the officers have decided to largely increase the capacity of the Freeport Carriage Co., in Freeport, Ill., which is one of the constituent parts of the Moline Plow Co. Recently the officers of the concern visited Freeport to consummate plans for greatly enlarging the carriage output in that city.

The party included F. G. Allen, vice-president; C. R. Stephens, secretary; C. A. Banister, treasurer, A. C. Barber, general manager; J. L. Irving, assistant manager, and G. H. Huntoon, director. They decided to erect two buildings upon their unoccupied property in this city that will mean a big thing for Freeport. In a word it will mean the additional outlay of about $150,000, and the employment of fully 1,200 men in both plants.

The new structure at the Freeport carriage plant will be erected between the old Robinson plant and the river bank. In its entirety it will be 550 feet in length. Owing to the fact that the building will not be erected in a straight line one wing will be 450 feet in length and 114 feet wide, while the second wing will be wide, while the second wing will be 100 feet in length, 90 feet wide. The entrance will be three stories high.

But this is not all of the building that was decided upon. There is an unoccupied space to the rear of the main offices of the Henney Buggy Company measuring 90 by 150 feet. It was decided that the urgent demands of the company would require the immediate erection of a building of this space equivalent to its area and five stories high.

The main offices of the plants will be maintained at the Henney Buggy Company site and the operations will be directed by Manager Steele. The old Robinson factory will be abandoned entirely for factory purposes, and will be used only for the storage of materials. Superintendent Allen, of the Freeport Carriage Company will maintain his office, however, in the old plant as heretofore.

The new building at the Freeport Carriage Company plant is practically completed, its dimensions being 322 feet long and 90 feet wide, and five stories high.

The present annual capacity of the two buggy plants in Freeport is 30,000 vehicles a year. When the additional buildings are completed and everything in working order the annual capacity will be doubled, or 60,000 vehicles will be turned out each year.

THE TRI-STATE ASSOCIATION.

P. T. Rathbun has been entertaining T. H. Elder, of Kenton, O., president of the Tri-State Implement and Vehicle Dealers' Association, Inc., of which Mr. Rathbun is secretary. V. C. Getz, membership manager for the organization, also attended the conference. The new directory of the association is now in the printers' hands and soon will be ready for distribution. At a near future date the board of directors of the organization will meet at Springfield for a couple of days and visit the various local factories.

152 MILES ON ONE CHARGE.

A Wood electric victoria on June 1 negotiated a round trip from Philadelphia to Atlantic City, a distance of 134.3 miles, on one charge of electricity. The driver also swears that after completing the trip the machine was run until the battery was exhausted and the odometer showed 152 miles.

CINCINNATI CARRIAGE MAKERS' CLUB OUTING.

The annual outing of the Carriage Makers' Club of Cincinnati occurred on June 12, and consisted of a trip on the steamer "Kentucky" to Laughrey Island. One hundred and fifty-five members and forty-five guests attended the function, and all immensely enjoyed the festival.

The entertainment committee, in selecting the Laughery Club last year as the scene of festivities, was so heartily complimented that it is no wonder that the same trip was selected for the good year 1909.

The crowd boarded the steamer "Kentucky" at 9:30 a. m., and from the time one's feet touched the gangplank until the steamer returned to the city, there was something interesting occurring. On the island, athletic sports and other good things were indulged in, several valuable prizes being won by some of the experts at Olympian games. A chicken dinner was served at the club house at 1 p. m., and a Brat Wurst Fry at 6:30 p. m. There was splendid music, everybody was in good humor, and the sentiment was unanimous that the entertainment was a decided success.

A baseball game between the "Muts," A. P. Herlinger, captain, and the "Yellows," I. O. Bauer, captain, was won by the former team. E. N. Wirthlin won the base-circling event; the long-distance throw brought out a champion in Andy Ackerman; in the 100-yard dash, E. N. Wirthlin again distinguished himself; Gus Geis outran the field in the fat men's race; D. L. Speaker won the potato race; Roy Mason was the successful contestant in the funny sack race; Charles Critchell proved his claim that he could kick a football higher and farther than anybody else in the club. Then Clem Davis and "I. O. U." Bauer lined up their men for a relay race, which was won strenuously by the Davis team. A six-hole golf contest was pulled off, in which R. D. Nibert came out winner.

A business meeting followed the dinner and two new members were elected to membership.

BREWSTER & CO. WILL MOVE TO LONG ISLAND CITY.

Brewster & Co., one of the oldest carriage manufacturers of New York City, are having plans drawn for a big building in Long Island City. The company has acquired for the purpose a large plot fronting 200 feet in the Queensboro Bridge Plaza and 300 feet in Riddle and Prospect streets. Plans for the structure are being made by Stephenson & Wheeler, architects.

The Brewster Company has occupied the large building in the westerly side of Broadway, from Forty-seventh to Forty-eighth street, just north of Long Acre square, for many years, and their lease expires in 1911.

This fact and the transformation of the neighborhood has led to the approaching removal of this old established firm to Long Island City.

TO BUILD AUTO WHEELS.

The Shortsville Wheel Company, of Shortsville, N. Y., is going into the manufacture of automobile wheels, in addition to continuing its manufacture of carriage wheels, and has purchased a complete outfit of machinery for the purpose from the Defiance Machine Company, Defiance, O. The new department is to be entirely separate from the carriage wheel plant, and it is expected that a new factory will be erected in the fall.

PROMOTED TO GENERAL MANAGER.

At a recent meeting of the directors of The Keystone Forging Company, of Northumberland, Pa., Isaac Cornwell was made general manager of the firm, in place of superintendent. J. D. Weekes was made sales manager.

Digitized by Google

TIRE MAKING BY MACHINERY.

The Goodyear Tire & Rubber Company has been working for years to perfect a tire making machine that would turn out the right kind of Goodyear tires, and now has several in operation.

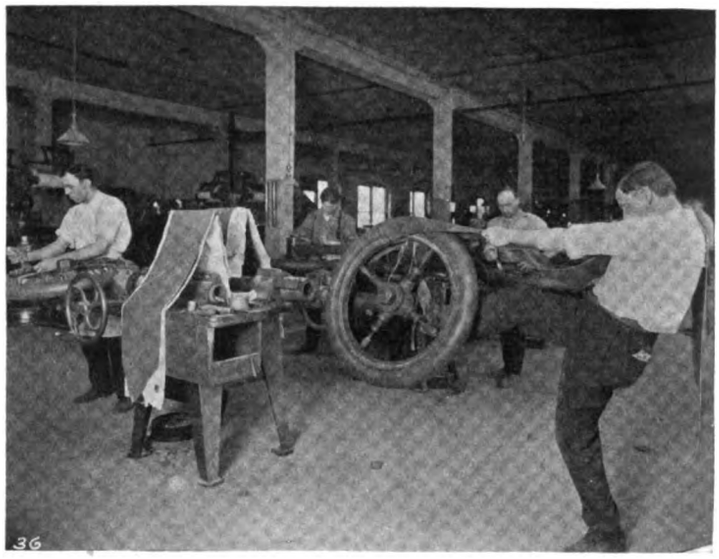
In the old way of making tires by hand, they have been built up, first a layer of fabric, then a layer of rubber and another layer of fabric, and so on until the body was complete. This fabric has always had to be stretched on by hand by men skilled in tire making. The durability and longevity of a tire would be largely dependent on the skill and strength of the workmen who made it.

To give the greatest mileage this fabric must be stretched to an absolutely even tension over each portion of the tire, and each alternate layer must be given the same tension as those previously put on.

It is self-evident that this evenness of tension could not be given when human hands were depended upon, as tires made in the morning when a man was fresh will be stretched more tightly and evenly than later in the day when his muscles have become weary.

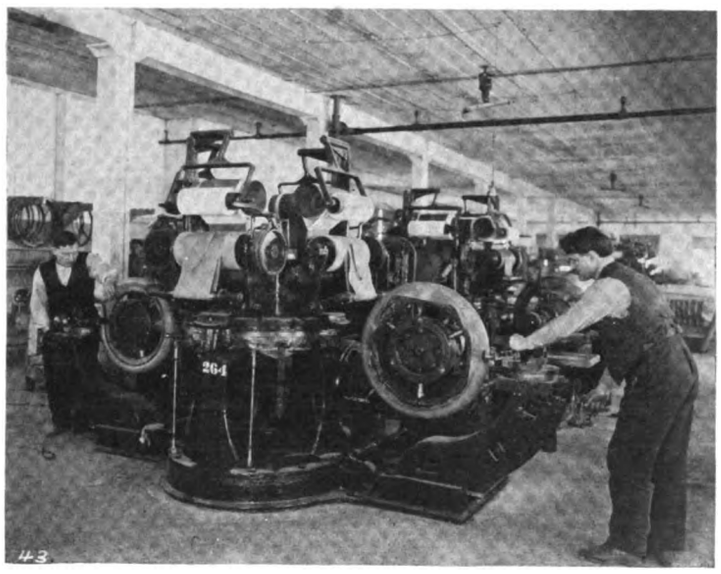
The new Goodyear machine gives a positively even tension to every strip of fabric used in every tire.

The accompanying illustrations show both the old method of laying fabric by hand and the new way by the Goodyear tire-making machine.



The Old Way of Stretching the Fabric on the Core by Hand.

A View of the Goodyear Tire-Making Machine, Showing Operators on Each Side Stretching Fabric.



A View of the Goodyear Tire-Making Machine, Showing How Fabric is Rolled Down After it is Stretched Over Core.

THE CLEVELAND INDUSTRIAL EXPOSITION.

The Cleveland Industrial Exposition opened June 7, and in point of the number of exhibitors and the space taken, proved to be the largest exposition of home products ever held by any city, any where, any time. Two hundred and eighty-two large exhibits, aggregating in value more than $2,000,000 were displayed on 115,000 square feet of floor area. The illumination of building and streets was made brilliant by the use of 50,000 lights. The Exposition will last two weeks, closing June 19, and in order to accommodate the visitors from all over Ohio and neighboring states, the committee has arranged a schedule of special days. The transportation companies co-operated with the committee, making special rates for each of the special days.

The Cleveland Industrial Exposition is a show of power, motion and action, and a hundred interesting machines perform their automatic tricks to the accompaniment of two large bands. An idea of the massiveness of the exhibition may be obtained from the fact that more than 2,000 attendants are required in the exhibits for demonstrating purposes, that the booth railings measure nearly three miles, and that the temporary building erected as machinery hall has a larger ground floor area than any other exposition hall in the United States. The Exposition started a new precedent, as all of the details were completed before the opening. The exhibition is under the auspices of The Cleveland Chamber of Commerce, and the project was started to teach Cleveland to know itself and the world to know Cleveland.

NO CHANGE IN VEHICLE MINIMUMS.

At a recent meeting of the Western Trunk Line Committee the railroad docketing the proposition of increasing the carload minimum weights on vehicles, asked that the proposition be stricken from the docket of subjects to be considered by the meeting.

IMPLEMENT AND VEHICLE RATES IN ILLINOIS.

At a meeting which took place recently the railroads decided to make no change in the present commodity rates applying on implements and vehicles throughout Illinois.

Digitized by Google

RECENTLY GRANTED PATENTS OF INTEREST TO THE CARRIAGE TRADE.

923,001—Wheel. G. M. Badger, Quitman, Ga.
923,104—Wheel Tire. A. R. Bangs, New York, N. Y.
923,107—Vehicle Spring. E. L. Barton, Chester, S. C.
922,841Vehicle for Hospital and Other Purposes. W. F. Bernstein, Philadelphia, Pa.
922,454—Vehicle Spring. L. C. Burnet, assignor to Burnet Compound Spring, Inc., Newark, N. J.
923,020—Device for Automatically Stopping Vehicles. S. H. Cluxton, Washington, D. C.
922,869—Front or Platform Gear for Vehicles. J. Erret, Cleveland, Ohio.
922,684—Cast Metal Axle for Vehicles. C. G. Ette, assignor to Ette Investment Company, St. Louis, Mo.
923,043—Slip Coupling. E. J. Gulick, Mishawaka, Ind.
922,474—Wagon Jack. G. W. Harris, Verdon, Va.
922,597—Vehicle Wheel. E. S. Kintz, Kenmore, assignor of one-half to M. O. Hower, Akron, Ohio.
922,631—Pneumatic Tire. F. Reddaway, Pendleton, Manchester, England.
922,965—Clutch Gear for Hubs of Vehicles. B. Settergren, assignor to J. Gubbins, Chicago, Ill.
922,969—Brace for Dump Wagons. P. H. Soentgen, Fort City, Pa.
922,541—Tire Tool. J. A. Swinehart, Akron, Ohio.
922,546—Wagon Seat. A. A. Vik, Northwood, N. D.
922,737—Spoke. T. H. Walbridge, Toledo, Ohio .
922,739—Tire Protector. E. J. Weidner, Lindsay, Neb.
923,619—Draft Equalizer. V. H. Boring, Sumner, Mo.
923,764—Vehicle Suspension. F. D. Brown and W. D. Whitney, Minneapolis, Minn.
923,135—Axle Skein. U. H. Brown, assignor to Brown Manufacturing Company, Zanesville, Ohio.
923,253—Dump Wagon. J. F. Eccard, assignor to Troy Wagon Works Company, Troy, Ohio.
923,161—Spring Wheel. J. Fliegel, Mallmitz, Germany.
923,643—Spring Wheel. T. W. Gratz, Jr., Olean, N. Y.
924,389—Whiffletree Fender. E. N. Smith, Freewater, Ore.
923,907—Cushion Support for Buggy Tops. W. H. Stevens, Lindsay, Ont., Can.
939,919—Vehicle Hub. W. R. Wilson, Cincinnati, Ohio.
924,724—Spring Wheel. J. W. Benson, North Wayne, Me.
925,299—Vehicle Body. Attachment. J. P. Colburn, Kilbourn, Wis.
925,157—Thill Support. M. E. Covey, Elgin, Ill.
924,661—Whip Socket. T. A. Hoover, San Fernando, Cal.
924,806—Anti-Skidding Attachment for Wheel Tires. G. A. Lyon, Philadelphia, Pa.
925,005—Spring Wheel. W. G. Marr, New Britain, Conn.
924,812—Pneumatic Tire. D. McArthur, Jersey City, N. J.
925,216—Starting Device for Automobiles. J. R. McPherson, Boston, Mass.
924,924—Tire Armor. W. O'Neil, Milwaukee, Wis.
924,820—Automobile Truck. H. L. Parrish, Benton Harbor, Mich.
925,027—Vehicle Wheel. R. H. Rice, Lynn, Mass., assignor to General Electric Company.
924,691—Automatic Vehicle Brake. E. Sanner, College Mound, Mo.
925,240—Wind Shield. J. H. Sprague, Norwalk, Ohio.
924,052—Tire Protective Rivet. E. B. Stimpson, Brooklyn, N. Y., assignor to Edwin B. Stimpson, Company.
924,702—Anti-Slipping Device. M. F. Stowe, assignor to Coldwater Specialty Mfg. Co., Coldwater, Mich.
925,398—Wheel. J. M. Toombs, Jr., Tuxedo Park, Mo.
925,740—Attachment for Running Gear of Vehicles. C. E. Abrams and C. H. Mason, Chatham, N. Y.
925,676—Vehicle Lamp. H. W. Beebe, New Haven, Conn.
925,985—Wheel Tire. A. Birnbaum, Erie, Pa.
925,560—Felly for Wheels with Pneumatic Tires. T. Bruckner, Vienna, Austria-Hungary.
925,868—Making Wheel Felloes. M. Conrad, assignor of one-half to C. Schuttler, Chicago, Ill.
923,278—Mail Cart. V. C. Koons, assignor to Continental Manufacturing Company, Colorado Springs, Colo.
923,279—Pneumatic Tire. A. Latimer, London, England.
923,707—Spring Wheel. J. E. Rielly, Newark, N. J.
923,714—Shaft Coupling. G. S. Searle, Rochester, N. Y.
923,205—Wheel for Road Vehicles. F. Shaw, Bishop Auckland, England.
934,454—Vehicle Jack and Lifter. D. L. Stearns, Martelle, Ia.
923,210—Steering Gear. C. F. Strawn, Philadelphia, Pa.
923,727—Draft Attachment for Vehicle Gears. G. Streich, Oshkosh, Wis.
923,230—Steering Gear. A. D. Wilt, Jr., Detroit, Mich.
924,214—Axle Lubricator. J. Aden, Greensboro, N. C.
924,028—Draft Gear and Coupling. B. Banyay, Newark, O.
924,529—Draft Attachment and Evener. W. Barto, Brewster, Kan.
924,424—Storm Shield. A. L. Brown, New Haven, Conn.
923,493—Dumping Wagon. J. D. Bunn, assignor of one-half to F. F. Eastlack, Jr., Philadelphia, Pa.
924,036—Spring Wheel. R. H. Burgess, Mullin, Texas.
924,148—Folding Box Seat. G. E. DeVore, Lansing, Mich.
924,334—Vehicle Wheel. J. R. Fouch, assignor to Fouch Disc Wheel Company, Minneapolis, Minn.
923,849—Mud Guard. B. L. Jones, Highbury, London, Eng.
924,480—Wagon Tongue. F. A. and N. C. Long, Washington, Iowa.
939,980—Wagon Body Lifter. W. P. Lucas, Sharp, Ark.
925,461—Draft Equalizer. E. Cook, Portland, Maine.
925,908—Wheel for Road Vehicles. J. Henderson, Bruton, England.
925,579—Running Gear for Vehicles. M. W. Heyenga, Chicago, Ill.
925,635—Whip Socket Lock. J. B. Hollenbeck, Madison, Ind.
925,580—Tire. C. H. Keiffer, Akron, Ohio.
925,711—Vehicle Wheel Tire. G. W. Lilley, assignor of one-half to J. Watchpocket, Pontiac, Mich.
925,780—Wheel Attachment for Dragging Logs and Heavy Loads. J. H. Long, Jacksonville, Ill.
925,930—Wheel Tire. J. D. Marvil, Laurel, Delaware.
925,498—Vehicle Lamp. J. M. Page, Stockton, Cal.
925,720—Vehicle Lamp. J. K. Punderford, New Haven, Conn.
925,721—Vehicle Lamp. J. K. Punderford, New Haven, Conn.
925,537—Axle. T. H. Walbridge, Toledo, Ohio.
925,543—Vehicle Brake. J. H. Wesson, Springfield, Mass.
925,735— Singletree. M. M. Wheeler, Winnsboro, Texas.
925,617—Automatic Wagon Brake. H. J. Williams, Willis, Kan.
925,739—End Gate. C. S. Wright, Kansas City, Mo.

Copies of above patents may be obtained for fifteen cents each by addressing John A. Saul solicitor of patents, Fendall Building, Washington, D. C.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE CARRIAGE TRADE.

Patents Expired May 24, 1909.

475,292—Wagon Bolster. L. Burg, Dallas City, Ill.
475,304—Spring Gear for Vehicles. J. Faske, Cincinnati, O.
475,313—Fifth Wheel. C. F. Hinman and M. G. Bunnell, Chicago, Ill.
475,366—Tongue Support. D. Ward, Peoria, Ill.
475,507—Thill Coupling. T. D. Lines, Syracuse, N. Y.
475,508—Thill Coupling. T. D. Lines, Syracuse, N. Y.
475,578—Running Gear for Vehicles. J. W. Leek, Cincinnati, Ohio.

Patents Expired May 31, 1909.

475,764—Lifting Jack. E. Garren, Glenwood, Ill.
475,836—Wagon Tongue Support. J. W. Wetmore, Erie, Pa.
475,916—Vehicle Shaft. J. Atkins, Cincinnati, Ohio.
475,943—Two-Wheeled Vehicle. A. B. Keyes, Princeton, Mass.
476,018—Vehicle Hub. W. Janiszewski, Cincinnati, Ohio.
476,199—Hub Attaching Device. L. Harris, Kalamazoo, Mich.

Patents Expired June 7, 1909.

476,390—Shaft or Pole Support. John H. Kennet, Huntington, W. Va.
476,417—Wagon Jack. George J. Schlosser, Leadville, Col.
476,443—Thill Coupling. John Bradford, Jr., Winslow, Ill.
476,533—Vehicle Wheel. Will A. Fleming, Lewiston Idaho.
476,535—Running Gear for Vehicles. William Le B. Hawes, Cincinnati, Ohio.
476,553—Wagon Brake. Timothy P. Randall, Adrian, Mich.

The above lists of patents, trade marks and designs of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City.

VISITED BIG WAGON FACTORY.

Delegates and visitors to the hardware men's convention in Fort Smith, Ark., made trips to the plant of the Fort Smith Wagon Works June 22, and were received by General Manager W. H. Johnson and shown through the extensive factory. The guests were profuse in their admiration of this great Fort Smith industry.

A tally-ho coach was provided by Mr. Johnson for the comfort of the visitors.

Digitized by Google

Trade News From Near and Far

NEW FIRMS AND INCORPORATIONS.

The Philip C. Traver Manufacturing Company, of Far Rockaway has been incorporated. It is proposed to make and sell automobile and carriage supplies, etc. The capital stock is $50,000, and the directors are Philip C. Traver, Lewis Pearsall and George Breng, of Far Rockaway.

Penders (Inc.) has been incorporated at Norfolk, Va. W. G. Fewell, president; J. E. L. Bohannon, vice-president; Geo. L. Pender, secretary and treasurer—all of Norfolk. Capital, maximum, $1,000; minimum, $500. Object, vehicle business.

Davenport-Wheeler Allen Co., Riverside, Cal., capital $25,000, to deal in wagons, buggies, vehicles and farming implements, has been incorporatd by L. M. Davenport, of Los Angeles, and George W. Wheeler, of Griswold, Ia.

The Superior Wagon Co., of Riverside, Cal., capital $25,000, has been incorporated by H. W. Amerling, Germantown, Pa., and H. L. Irons, West Philadelphia, Pa.

Woodland Wagon & Auto Co. has been incorporated at Cleveland, Ohio, with a capital of $25,000.

E. E. Hughes, of Lynchburg, Va., contemplates the establishment of a buggy factory in Anniston, Ala.

Frank Tuttle is about to erect a carriage factory in Muskogee, Okla.

The Kingsbury Carriage Co. has been incorporated at Sandy Hill, N. Y., to handle implements, wagons and carriages and conduct an automobile garage.

The Wrought Iron Buggy Co. has been incorporated with a capital stock of $5,000 at Weatherford, Tex.

The American Steel Rim Co. has been incorporated at Chicago to manufacture steel rims and wheels.

Otto H. Hesse is about to begin the erection of a carriage factory at 1704 Grand avenue, Kansas City, Mo.

J. Q. Currier has engaged in the vehicle business in Nicollet, Minn.

T. G. Armstrong is about to engage in the hardware and vehicle business in Big Timber, Mont.

George White has engaged in the vehicle business in Deary, Idaho.

Olaf Mattson is about to open a stock of implements and vehicles in Ash Creek, S. D.

Alfred Helling has engaged in the vehicle and implement business in Hanska, Minn.

The Detroit Socket Co. has been incorporated in Detroit, Mich., with a capital of $8,000 to manufacture vehicle parts.

Barnum Bros. are erecting a carriage repository in Crawford, Neb.

The Corbitt Buggy & Surrey Mfg. Co., of Henderson, N. C., is going to add the manufacture of automobiles.

The Horton Wagon Co. has been incorporated in Augusta, Ga., with a capital stock of $50,000.

W. G. Dorland is about to engage in the vehicle and implement business in Aurora, Neb.

John W. Munger & Co. are opening a stock of vehicles, implements, etc., in Vermontville, Mich.

The Finley-Flautt Carriage Co. has been incorporated with a capital stock of $25,000, in Memphis, Tenn.

Crouch & Cruzen have engaged in the implement and vehicle business in Carrollton, Mo.

B. C. Pflug has engaged in the vehicle and implement business in Exeter, Neb.

W. F. Connor is about to engage in the vehicle business in Ward, S. D.

Swanson & Rodway have engaged in the vehicle and implement business in Fairview, S. D.

The Washington Buggy Co. will erect a factory in Washington, N. C., with a capacity of 3,000 buggies annually.

The Read-McGill Co. has been incorporated to do business at Louisville, Ky. The company will deal in blacksmith and wagon builders' supplies and wholesale and retail hardware. The capital stock is fixed at $20,000. The incorporators are E. D. Read, Joseph H. McGill and James A. McGill.

The Henry Knapheide Wagon Company, at Quincy, Ill., has increased its capital stock from $20,000 to $25,000.

Regal Tire & Rubber Co., Camden, N. J., capital $250,000, has been incorporated by W. H. Wilson and others.

BUSINESS CHANGES.

Doering, Tolzman & Bakken have succeeded Carl Doering in the vehicle business in Olivia, Minn.

E. M. Wagner has purchased the H. R. Cole stock of vehicles, etc., in Summerfield, Kan.

Edwards & Grimm have sold out their stock of vehicles, etc., in Alva, Okla., to Geo. D. Carter.

James Shawhan has purchased the stock of vehicles, etc., of A. F. Lindquist, in Taylor Falls, Minn.

Rice & Dowd have purchased the implement and vehicle business of Wolters & Cox, in Downs, Kan.

F. L. Hamilton has bought out the Stuart-Clure Co.'s stock of hardware and vehicles in Pullman, Wash.

Edwards & Grimm have sold out their stock of vehicles, etc., in Alva, Okla., to Geo. D. Carter.

R. W. Stillinger has purchased the vehicle and implement business of Redler & Bronson, in Albion, Neb.

Andrew Anderson has succeeded Hanson Bros. in the implement and vehicle business in Ephraim, Utah.

D. J. Chamblin has purchased the stock of vehicles, etc., of Geo. L. Kessler, in Robinson, Ill.

Sellin & Co. have purchased the implement and vehicle business of Fereh Bros.

John Parr has purchased the vehicle and implement business of R. N. Atchison, in Merna, Neb.

O. L. Jewett has succeeded Ptak & Son in the vehicle and implement business in Friend, Neb.

C. E. Switzer has bought of Mrs. J. H. Martin her residence, carriage shop and woodworking establishment adjacent, at Springfield, Mass.

The Farmers' Supply Co., recently organized at Norfolk, Va., has bought out the buggy and vehicle business of the Harriss Plumbing & Supply Co.

Rambo & Rambo have sold out their carriage making establishment at Lynnville, Tenn., and will move to Columbia, where they will open an establishment.

MISCELLANEOUS.

A building is being erected by Niel Whitney at Houlton, Me., for his carriage trimming and upholstering shop.

The Wallace Buggy Co., at Chattanooga, Tenn., is increasing its capital stock from $25,000 to $50,000. The incorporators are Fred F. Wallace, Charles Hall, Fred W. Billmeyer, Robert W. Biese and W. B. Garvin.

The Haynes Hardware Company has opened its new display room for buggies at Emporia, Kan. The room has 4,000 square feet of floor space, and will hold forty-five buggies. It is one of the largest buggy display rooms in the State.

Digitized by Google

The Dublin Buggy Co., of Dublin, Ga., has increased its capital stock and is building an addition to its plant.

The Beard Vehicle Co. is having a new repository erected in Paola, Kan.

J. J. O'Harra has moved his stock of implements and vehicles from Oakdale to Albion, Neb.

Imlay & Henry are building an addition to their vehicle and implement store in Willow Lake, S. D.

Geo. Hackney, Jr., will erect a two-story building for the manufacture of buggies, at Washington, N. C.

BUSINESS TROUBLES.

On petition of the Houghton Sulky Company, of Marion, O.; the Findlay Carriage Company, of Findaly, O., and E. B. Gaumer & Sons, of Urbana, O., Harry F. Pavey, of Indianapolis, has been appointed receiver for the Indiana Carriage and Automobile Company, of Indianapolis, by the federal court. The petitioners also filed a petition asking that the Indiana Carriage & Automobile Company be adjudged bankrupt. The petitioners assert claims aggregating $555.96. In asserting an act of bankruptcy on the part of the automobile and carriage company, the petitioners set forth that, while the company was insolvent, Michael J. Ryan was appointed receiver for it, several days before, by the superior court of Marion county.

J. H. Landis was appointed receiver June 3 of the Troy (O.) Buggy Works Company, an application having been filed for a receiver appointment in a case brought by the Piqua National Bank against the company, W. E. Bowyer, T. C. Leonard, W. R. Saunders and H. M. Rossiter, on a cognovit note of $2,500, with 8 per cent. interest from May 1.

At Lexington, N. C., A. P. Kelly, harness and buggy dealer, made an assignment, executing a deed of trust to W. M. Phillips. No figures were given out. Mr. Kelly recently purchased his brother's interest in the firm of Kelly Brothers.

FIRES.

The Morgan Carriage Co., of Louisville, Ky., has suffered a severe fire loss.

The wagon and blacksmith shop of Miller & Rich, at Walnut, Iowa, suffered a loss by fire.

Fire damaged the carriage factory of Joseph Pierotti & Son at Oakland, Cal.

A carelessly thrown match caused a $200 fire in the Kansas City (Mo.) Carriage & Wagon Co.'s plant.

ANOTHER WHITE GASOLINE MACHINE.

One of the largest buggy manufacturers in the West, the George White Buggy Company, Rock Island, Ill., has established an automobile department and will take up and push this work vigorously. The machine upon which the efforts will be concentrated is of the high wheel type with solid tires. Four models are listed, differing only in the body work.

The motive power is a two-cylinder opposed air cooled four-cycle unit, set crosswise of the steel frame, but attached directly to the latter. The fan flywheel is placed in front and the transmission of power is through a two-speed planetary gear. From this a shaft drive of the approved type, and inclosed in a tube serving as a torsion rod, drives back to the rear axle.

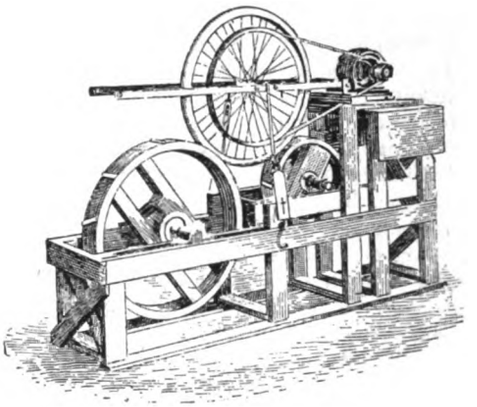
The wheels are of large diameter, 36 front and 38 rear, equipped with 1¾-inch tires of the solid type. In contrast with the usual form of motor buggy, this one is fitted with magneto ignition, the magneto being placed between the two cylinders on top of the crankcase, and is friction driven from the rim of the flywheel.

The steel frame carries at the front and rear a pair of full elliptic springs, these being attached to the frame by means of lugs, which extend upward. The result is to bring the center of gravity as low as is consistent with large road clearance.

RUBBER TIRE TESTING.

This machine was made to test the life of a bicycle tire. The average tire can stand its vigorous punishment little over 15 hours. During that time the tire is driven over rough wooden blocks, steel strips and a coarse grade of emery cloth, by a small electric motor attached directly to the wheel.

The tire to be tested is placed upon a rear bicycle wheel. Common spring balances, which correspond to the weight of a rider, hold the tire down with an equal pressure on two wooden wheels underneath. The faces of these wooden (resistance) wheels are covered with emery cloth of coarse texture, and blocks of steel and wood at intervals. The motor drives the



Machine Reproducing Road Conditions

tire wheel at the rate of 14,000 revolutions every hour over the rough edge of the two wooden wheels, which makes the usage much like that to be expected among the furrows and ruts of a country road.

Every time the tire wheel revolves, it travels over 8 ft. of emery cloth and is struck by 21 blocks, or, in other words, 8 ft. of bad country road. The quality of the tire is determined by the time it takes to wear down to the canvas and by chemical analysis of the worn bits of rubber.

STATISTICS THAT CAUSE REFLECTION.

Some 200,000 automobiles is the estimated output for the so-called "1910" product. These figures are somewhat staggering, but from present indications it would appear that the total is based on a substantial optimism resulting from the excellent "1909" selling season.

There isn't any question but that this great country is going to absorb thousands of automobiles in the next few years, for thousands of users of horse-drawn vehicles are yet to be supplied with the inevitable motor-driven successors.

But one cannot resist the inclination to utter a word of caution in safeguarding against any such calamity as an overproduction, for 'tis better to have the supply fall below the demand than that the output should flood the natural sources for absorption of the product. True, the equilibrium would quickly be regained, but the damage accomplished in the interval would be ultimately at the cost of the many.—The Automobile.

FRICTION DRIVE PATENT SUIT DECIDED.

Some months ago the Buckeye Manufacturing Company, Anderson, Ind., makers of the Lambert cars, brought suit against the Waltham Manufacturing Company, Waltham, Mass., for alleged infringement of the patents of the former covering friction driving. This suit has been on in the United States Circuit Court of Massachusetts, and was just decided recently. Justice Colt, in rendering a decision, held that the patent was valid, and had been infringed by the defendant. The latter was therefore enjoined from further use of this device and was required to pay $1,000 damages.

Digitized by Google

RECENTLY GRANTED PATENTS OF INTEREST THE AUTOMOBILE AND CARRIAGE TRADE.

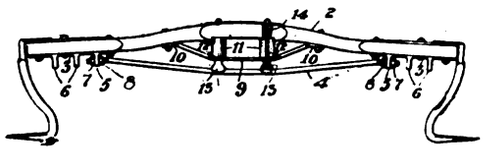
Spoke. Thomas H. Walbridge Toledo, Ohio. No. 922,737. Patented May 25, 1909.

A spoke, the body of which is a hollow shell of sheet metal, provided at its inner end with a hasp, and at its outer end with a bushing distinct from shell, the bushing having a socket ex-

tending therethrough in concentric relation with the spoke, and the inner edge of opening being oblique with respect to the inner surface of the spoke body.

Front or Platform Gear for Vehicles. Joseph Erret, Cleveland, Ohio. No. 922,869. Patented May 25, 1909.

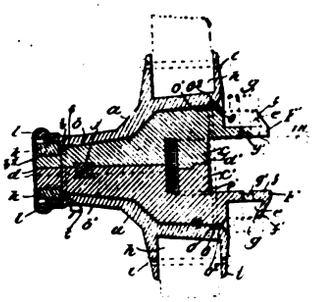
A front or platform gear for vehicles, a splinter bar having a truss rod secured thereto, and a truss brace also secured to the



central portion of the splinter bar and forming a seat for the tongue hounds, and the brace also having means engaging the truss rod to act as a strut between the rod and the splinter bar.

Spindle Joint for Automobiles and Other Vehicles. John A. Myers, Braddock, Pa. No. 922,939. Patented May 25, 1909.

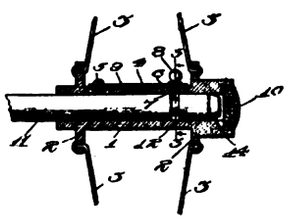
A vehicle running gear having a spindle formed of an upper and a lower section interlocked with each other, the inner ends of the section being mutually chambered and each formed in-



tegral with a vertically extending section of a two part pivot post, both sections of which are in alinement, in combination with an axle having a cylindrical end formed with an eye through which the post passes.

Wheel Hub. William C. Thede, Chicago, Ill. No. 921,912. Patented May 18, 1909.

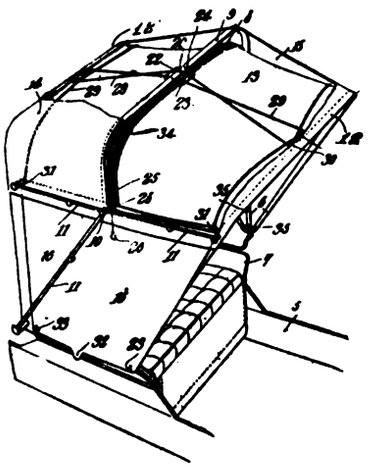
The combination with a hub having separate spoke flanges, and an aperture between the same, of a flat spring arranged



alongside of the hub between the flanges, and having one end secured to the hub, a pin carried by the other end of the spring and extending through the aperture in hub, a leather gasket mounted alongside of spring to prevent dust from entering through aperture, an axle having an annular groove adapted to receive pin and also having its end tapered so as to permit the pin to slide up the incline when the hub is slipped upon the axle, and a rubber closure inserted within the open end of hub.

Buggy Curtain. George W. Atkins, Milton, Del., assignor of one-half to Wm. E. Townsend, Felton, Del. No. 922,073. Patented May 18, 1909.

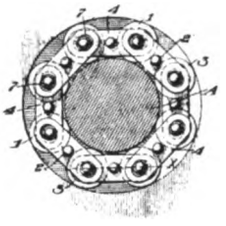
A vehicle top including terminal and intermediate bows, the intermediate top bow being provided with a longitudinal guide groove, a casing secured to the intermediate bow and having a



plurality of pulleys journaled therein, a transverse bar secured to the casing, an inner covering, an outer covering extending over the transverse bar and spaced from the inner covering to form a chamber, side curains slidably mounted within said chamber, pulleys secured to the terminal top bows, and a flexible operating cord secured to the opposite end of each curtain and having its intermediate portion passing over the pulleys on the terminal bows and casing and its free end extended within the groove of the intermediate bow.

Roller Bearing. Samuel Kaye, Columbus, Miss. No. 922,288. Patented May 18, 1909.

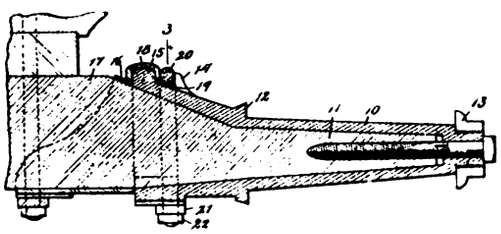
A roller bearing comprising a shaft, rollers of two diameters alternately arranged, the larger rollers bearing upon the shaft,



and the smaller rollers upon the adjacent larger rollers on each side thereof, and links having orifices therein to receive the journals of two large and one small roller to maintain their alinement.

Axle Skein. Uri H. Brown, Zanesville, Ohio, assignor to The Brown Manufacuring Company, Zanesville, Ohio. No. 923,135. Patented June 1, 1909.

An axle skein, the combination of two members, one of the members having a bead on its outer surface at one end and the



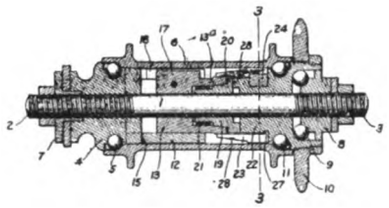
other member having a substantially U-shaped end portion provided with a channel or groove on the inner face thereof adap-

Digitized by Google

ted to receive and hold the bead on the other member, and means for locking members together.

Clutch and Brake Mechanism. Frederick S. Ellett and Clayton E. Forsyth, Elmira, N. Y., assignors to Eclipse Machine Company, Elmira, N. Y. No. 923,254. Paented June 1, 1901.

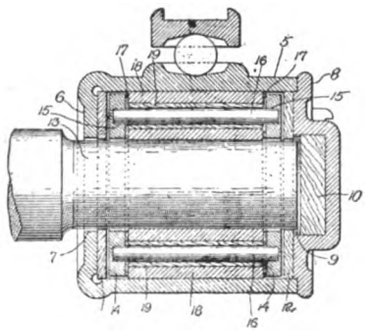
The combination with a rotary hub, of a driving member, having an extension that enters the hub, and a recess that af-



fords a bearing surface; an expansible, split clutch ring between extension and hub; and an expanding block within recess adapted to be forced out upon expansible clutch ring by the surface.

Roller Bearing. Eliel L. Sharpneck, Winthrop, Mass. No. 923,716. Patented June 1, 1909.

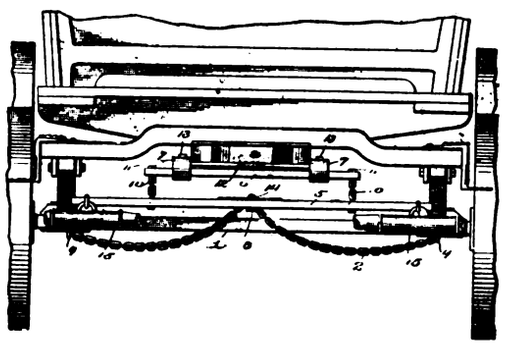
The combination with a cylindrical casing having a cover furnished with an axially disposed pocket, a wooden block in the pocket, a pair of wooden anti friction collars frictionally se-



ured in casing, and a cage rotatably mounted between the collars and comprising a pair of annular members having sockets at their inner sides, rolls carried by pins consisting of wooden bushings rotatably mounted on pins and outer metallic sleeves into which bushings are driven, and anti friction washers located between rolls and annular members and mounted on pins.

Draft Attachment for Vehicle Gears. Gabriel Streich, Oshkosh, Wis. No. 923,727. Patented June 1, 1909.

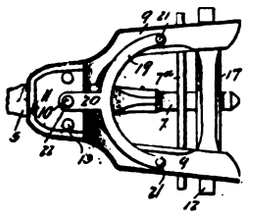
A draft attachment for vehicle gears comprising a seat with a flooring having its opposite ends projecting beyond the seat, loops bolted to the projecting ends, a bar loosely mounted in said loops and having its opposite ends projecting therefrom, chains secured to the projecting ends of the bar, the chains



having a depending evener bar thereon, whiffletrees secured to the opposite ends of the evener bar, the evener bar being also provided with a clevis having a coupling pin inserted therethrough, an axle having the outer ends of chains of the evener bar secured thereto, the inner ends of the chains being secured to the clevis, and evener bar adapted to have longitudinal and lateral play so as to permit of longitudinal and lateral movement of the bar in the loops.

Wagon Tongue. Fred A. Long and Ned C. Long, Washington, Iowa. No. 924,480. Patented June 8, 1909.

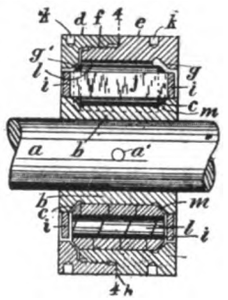
The combination of a pair of hounds the forward ends of which are connected by a plate, a cross beam connecting the opposite ends of hounds, and having on one side a recess disposed above the plane of plate, a metallic strip disposed lon-



gitudinally of cross beam having a struck-out U-shaped portion overlying recess, a tongue disposed intermediate hounds and having a reduced extremity which is designed to enter the opening formed by recess and U-shaped portion of metallic strip, and a substantially T-shaped hammer strap having one limb connected to the plate and its other limb to the cross bar.

Roller Bearing. Cephas I. Shirley, Newark, N. J., assignor to Hyatt Roller Bearing Company, Harrison, N. J. No. 924,387. Patented June 8, 1909.

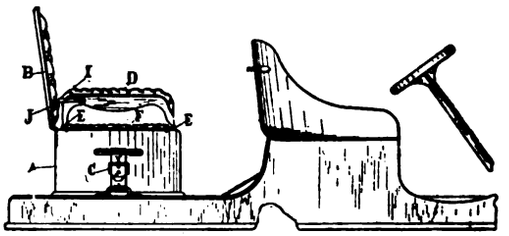
A roller bearing, the combination, with a spool attached to the shaft and having integral beveled heads at its ends, of spirally wound tubular rolls fitted to the body of the spool and hav-



ing conical ends to fit the flaring heads, a transversely divided casing having a cylindrical seat fitted at the outer sides of the rolls and having integral bevelled flanges to engage the conical ends of the rolls, and a cage rotating with the rolls to hold them parallel within the casing.

Folding Box Seat. George E. De Vore, Lansing, Mich. No. 924,148. Patented June 8, 1909.

A folding seat the combination of a box frame having a hinged cover adapted to form a back of the seat, a seat proper within the box frame and two supporting frames at the oppo-



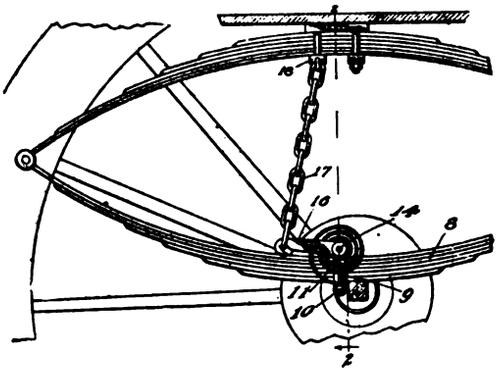
site ends of the box frame vertically movably supporting the seat therein, each supporting frame comprising an arm rest having arms extending into the box frame and having hinge connections therewith adapting each frame to be folded longitudinally within the box into the space below the cover, the arms being provided near their hinged ends with supporting means for the seat adapted to raise and lower the seat proper by the actuation of the frames.

Metallic Tire. George E. Fortescue, Arncliffe, New South Wales, Australia. No. 924,156. Patented June 8, 1909.

A metallic tire, the combination with a felly, of a scarf piece

Digitized by Google

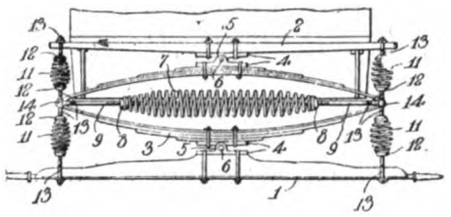
mounted therein provided with projecting studs, a tire having slots longer than the studs adapted to take over the latter and



filling members interposed between the ends of the slots and studs.

Vehicle Spring. Edmon M. Mayhew, Mooresville, N. C., assignor of one-half to T. H. Pegram, Mooresville, N. C. No. 921,862. Paented May 18, 1909.

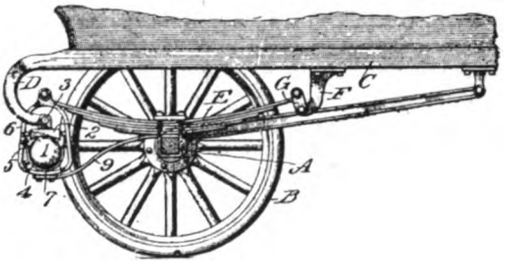
The combination with an axle and a bolster, of coiled springs provided with collars at their ends, yokes having threaded en-



gagements with the collars, a pivotal connection between adjacent yokes, and rigid connections between the end yokes and the bolster and the axle respectively.

Shock Absorber for Vehicles. Edward A. Garvey and Chrisopher A. Garvey, St. Louis, Mo., assignors to The American Auto Appliance Company. No. 923,162. Patented June 1, 1909.

The combination, with a running gear, and a body frame; of stirrups supported by the running gear, a carrier suspended from



the body frame within the stirrups bearers suspended from the carrier, and an elongated cushion mounted upon the bearers against the carrier.

Spring for Automobiles, etc. Charles A. Lieb, New York, N. Y. No. 922,169. Patented May 18, 1909.

A vehicle spring composed of a series of superposed leaves, each leaf being formed of a series of bars placed side by side,

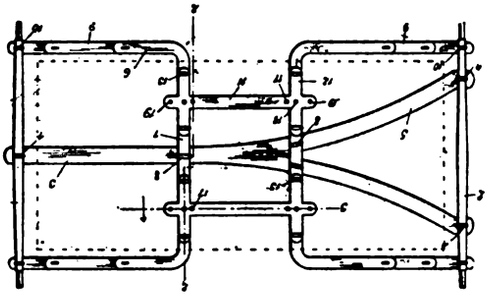
the engaging surfaces of the bars of adjoining leaves being so formed as to interlock with each other.

Spring Suspension. Alanson P. Brush, Detroit, Mich. No. 923,765. Patented June 1, 1909.

A spring suspension comprising in combination a support or frame, an axle, a suspending rod supporting the axle, a coiled spring engaged upon the rod, a radius rod rigidly engaged with the axle, the radius rod having a jointed frictional engagement upon the support or frame.

Vehicle Spring. Ernest L. Barton, Chester, S. C. No. 923,107. Patented May 25, 1909.

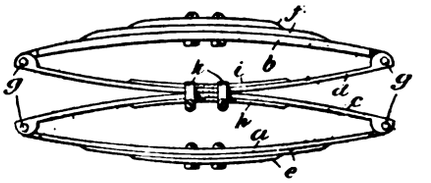
A spring gear, a longitudinal member, oppositely disposed end members having their central portions united to the central



member in spaced relation and formed with arms adapted to provide short side springs, and a connecting member arranged between the end members on each side of the central member.

Vehicle Spring. Lewis C. Burnet, Newark, N. J., assignor to Burnet Compound Spring, Inc., Newark, N. J., a Corporation of New Jersey. No. 921,947. Patented May 18, 1909.

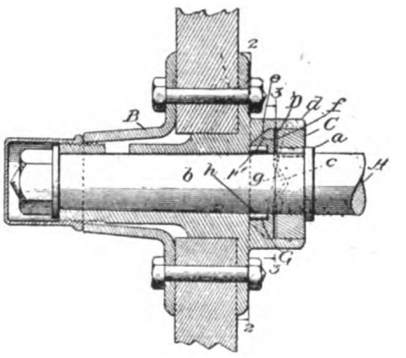
A vehicle spring, the combination of a relatively stiff bowed member, a relatively weak bowed member, the members being



secured together with their concave sides facing in so as to be independently flexible, and means to limit the return of the weaker member after compression.

Clutch Gear for Hubs of Vehicles. Bernhard Settergren, Chicago, Ill., assignor to John Gubbins, Chicago, Ill. No. 922,965. Patented May 25, 1909.

A double acting friction ratchet mechanism comprising a driving shaft, a friction member actuated by the driving shaft, a driven member actuated by the friction member, the friction



member and driven members being each provided with a single engaging frictional surface for driving the driven member in opposite directions.

CAPITAL UP TO $3,000,000.

The capital of the newly incorporated Columbia Motor Car Company, which is being organized by Harry Payne Whitney, Thomas F. Ryan, Anthony N. Brady and other bondholders of the old Electric Vehicle Company, was increased June 30 from $48,000 to $3,000,000.

The new company will begin producing Columbia automobiles on a much larger scale than heretofore.

Digitized by Google

OBITUARY

Chas. W. Cathcart.

Charles W. Cathcart, vice-president of the Hess Spring & Axle Co., of Pontiac, Mich., and one of the best known vehicle men in the country, died June 9, in Springfield, Ohio, his boyhood home. His residence was 28 Watson street, Detroit. Mr. Cathcart, whose demise was caused by rheumatism of the heart, was 55 years old, and had been a traveling salesman for and an officer in vehicle corporations during his business life. He was with the Hess Co. in Cincinnati and Pittsburg and had traveled out of other cities. He left Pontiac last Friday night with his wife, who was ill, and, strangely enough, he appeared to be in perfect health. The widow alone survives.

Frederick Herman Buchholz.

Frederick Herman Buchholz, president of the Janesville (Wis.) Carriage Works, a pioneer resident and a substantial citizen, died at his home June 16. He leaves a wife and five children.

Born in the town of Elbing, Eastern Prussia, on April 15, 1839, Mr. Buchholz received his early education in his native town and learned the trade of a carriage maker in the shop conducted by his father.

In 1856 he came to America and on June 17 of that year took up his residence in Janesville. For four years he worked as a journeyman for the carriage maker, Robert Hodge. In 1860 he bought an interest in the business and the firm name was changed to Hodge & Buchholz. That association continued for twenty-one years. Mr. Hodge died in 1882 and Mr. Buchholz carried on the business alone for a few years. Then, for a brief period, he was in partnership with O. F. Nowlan. In May, 1887, about the time Mr. Nowlan retired from the concern, Clarence W. Jackman was admited into partnership under the firm name of H. Buchholz & Co. The firm was incorporated under the name of the Janesville Carriage Works, with Mr. Buchholz as president, in 1893.

Daniel Hoffman.

Daniel Hoffman, aged 82 years, a former well-known wagon maker of Noblestown, Burgettstown and Washington, Pa., died June 16. He was born in Noblestown, Pa. He leaves a widow and two sons.

Lee Sprinkle.

Lee Sprinkle died at his home at Winston Salem, N. C., June 2, after having been in declining health for some time. Mr. Sprinkle was 50 years of age and is survived by his wife and one son. He was employed by Smoak & MCreary as manager of the carriage and buggy department.

Henry A. Lanman.

Henry A. Lanman, president of the Columbus Bolt Works, Columbus, Ohio, died June 12 at the family residence. His health had been failing for some time, and, after a winter spent in Florida, he returned to Columbus, his condition becoming worse.

Mr. Lanman was born February 1, 1845, and went to Columbus when a young man, where he secured a position with the Ohio Tool Supply Co. Later he was associated with James Ohlen, and for four years was a partner in the firm of Ohlen & Lanman.

In 1870 he became treasurer of the Columbus Rolling Mill Co., and in the same year became an officer in the Columbus Bolt Works, which for thirty years prospered under his management.

Joseph Schellenberger.

Joseph Schellenberger, head of the firm of Schellenberger & Co., harness and carriage dealers, Jersey City, N. J., died of heart disease, following an illness of nine weeks. He was 62 years of age and is survived by a widow, a son and two daughters.

Joseph T. McClellan.

Joseph T. McClelland, for fifty-four years in business at one stand at Bryn Mawr, Pa., died suddenly June 24 from acute indigestion.

George W. Ferris.

George W. Ferris, who for a long period conducted a carriage manufactory at Saratoga Springs, N. Y., died at Delmar, N. Y., recently. He was born in 1833.

George W. Sweeney.

George W. Sweeney, one of the best known citizens of Nashville, Tenn., died June 3, after an illness extending over several months. He was 57 years old and for a long term of years conducted a carriage business on First avenue. He leaves a wife and six children.

Rei Rathbun.

Rei Rathbun, of Springfield, Ohio, died June 23 of heart disease. For the past few years he has been associated with the carriage firm of Rathbun Fisher & Company.

A DISGRUNTLED USER.

The operating methods of a New York motor truck user, who has done much to discourage others from purchasing vehicles of various types, were investigated during the past month with interesting results. While the concern in question keeps no very accurate cost account, they "have enough," as they say, "to tell if the machine is an economic method of delivery." In the investigation, one of the first items of expense encountered was a charge of $175 each month, "cost of current" for charging the battery of one five-ton truck. No one could explain how such a figure was arrived at, and no itemized entries on the books were found to correspond to it. The item of repairs and replacements footed up to about $150 a month—the actual work being performed by the driver— and yet the total amount of parts billed by the truck maker's factory in fourteen months was $240. A representative of the Commercial Vehicle was informed at the time of his last call, that the machine was to be laid up and that before it would be placed in service again, an entire new set of tires would be necessary; careful inspection developed that the tires were good for at least 2,500 miles and did not even require resetting.

One day an "expert" electrician who happened to be passing the garage of this concern informed the driver that he should always discharge the battery if he did not have occasion to use the truck for a day or two; so thereafter, on Saturday nights and other days when the truck was not to be taken out the following day, the driver would jack up the wheels and allow them to run till all the "juice" was exhausted.

This condition of affairs seems hardly credible and yet it is not a solitary case by any means, as those who have occasion to keep in touch with the management of delivery systems of business houses know only too well. The motor truck salesman is often confronted by "information" concerning machines given out by equally well informed (?) users, which frequently makes sales impossible.—Exchange.

AMERICAN MACHINES ABROAD.

American automobiles were sent in 1908 (nearly five million dollars' worth) to fifty countries and colonies, including, first, the United Kingdom, 1½ million dollars' worth, Canada ¾ million, France over ½ million, Mexico 1-3 million, Italy ¼ million, Cuba 167 thousand dollars' worth, and the Dutch East Indies 80 thousand dollars; while other countries to which they were sent included Turkey in Europe, Egypt, the Canary Islands, British South Africa, Siam, Hongkong, Japan, Straits Settlements, British India, Australia and New Zealand and the Philippine Islands.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

THE INVESTIGATION OF DUSTLESSNESS OF CARS WITHOUT DUST.

(Paper read before the Royal A. C. of Great Britain by W. R. Cooper.)

On the importance of the dust question very little need be said, for it is now well recognized that much of the prejudice against automobiles in country districts is due to the "dust nuisance." The Royal Automobile Club has been active in both the directions along which this problem is open to attack. On the one hand, much is being done to improve the character of the roads, with most satisfactory results; on the other hand, the dust committee has carried out several dust trials, and tested many devices, with the object of improving car design. Although progress has been made in this direction also, it must be admitted that our knowledge of the reasons why one car is dusty and another comparatively dustless is very inadequate.

The method of investigation used by the club so far has been the photographing of the dust clouds raised by cars. Although such a method is good for telling whether a car is more dusty or less dusty than another car, it has the disadvantage that it

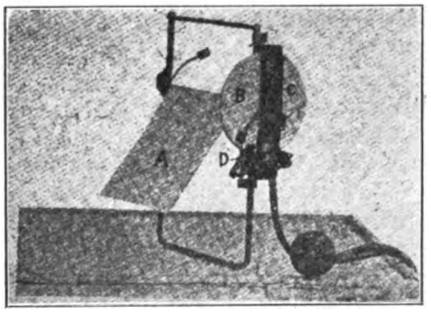


Fig. 1.—Instrument for Registering Direction of Air Currents.

does not lend itself very well to the investigation of small alterations in design, because the change caused thereby in the dust cloud may be somewhat small, and the effect of the alteration is masked by the volume of dust raised by the car as a whole. A few years ago I described to the club some experiments in which I attempted to deal rather with the elements of a car than with the car as a whole. These experiments were promising up to a certain point, but the method had the disadvantage that it still depended upon dust and photography, and was therefore difficult to carry out.

Last autumn it occurred to me that useful information might be obtained by determining the direction of the air currents round a car in motion. It may be assumed that if a car could be run so as to leave the air within, say, 6 inches of the ground in an undisturbed state, the car would be practically dustless. This is an ideal to which we can scarcely expect to attain, but it will be admitted that the less such a layer of air is disturbed the better will be the result. On the other hand, if the motion of the car causes currents of air to flow downward, the layer of air near the surface of the road will be disturbed, and if the air currents are directed upward behind a car the lower layers of air charged with the dust raised by the tires may be carried up also, and a more or less dusty car will result.

In what follows I give some determinations of this kind. The apparatus I used at first was made to give a permanent record when desired, and could be attached to any part of the car. As shown in Fig. 1, it consists of a vane A, 4½ inches square, which is made of a light wire frame covered with tissue paper.

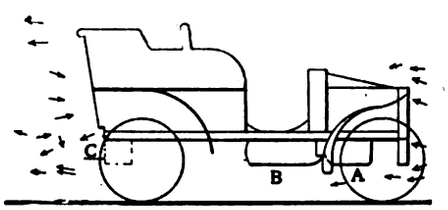


FIG. 2.

This is capable of rotation about one edge, and is balanced so that it will remain in any position. The spindle on which it is mounted also carries a circular aluminum disc B, to which a disc of paper is atached and renewed when necessary. A lever C, pivoted at the center, has a strip of rubber at the top end; this is moistened with ink such as is used for rubber stamps. The other end of the lever rests on the bulb of an ordinary pneumatic tube for working photographic shutters, and is kept down by a rubber band. Thus the inked end of the lever is normally kept from touching the paper. But on squeezing the rubber ball at the free end of the tube, the lower end of the lever is pressed outward and the inked end makes a mark on the paper, the position of the mark round the circumference thus recording the position of the vane at the moment. In order to prevent the vane from oscillating undesirably, two camel hair brushes are fixed at D, and press against either side of the disc. The instrument, as shown, suffers from the defect that the vane cannot rotate completely round; this point could be remedied by extending the framework upward.

In taking records the instrument is fixed to any part of the car requiring investigation. In the records given in this paper three observations were taken for each point; that is, the pneumatic ball was squeezed three times in fairly rapid succession,

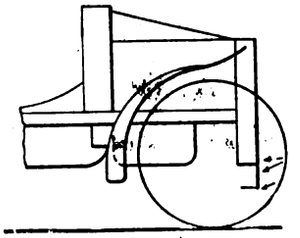


FIG. 3.

and the mean of the three angles so obtained was taken as the result. By so doing an indication was obtained of the steadiness or otherwise of the air current recorded. In some positions the air currents were found to be very steady, and all three readings would lie within an angle of 5 degrees or less; but, on the other hand, in certain positions this angle would

Digitized by Google

rise to 20 degrees, or even more. In the following diagrams directions where the air currents were so unsteady that this angle exceeded 20 degrees are shown by half headed arrows.

Some of the results obtained with a 10 horse power White steam car running at about twenty miles per hour are shown in Fig. 2, which is a diagram showing the direction of the air currents at various points on a mid-longitudinal section, except one near the front mudguard. The front of the car consists of a square condenser with horizontal tubes, these having spaces between them of about 9-16 inch, which is filled to some extent by radiating sheet metal rings on the tubes. The passage for the air is thus fairly easy.

It will be noticed that although upward deflections are certainly marked, the deflections downward near the road surface

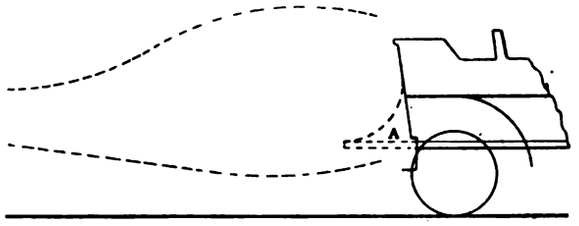


Fig. 4.

are but slight. The rather decided downward deflection near the bottom of the condenser is probably due to the number plate, for this was unchanged when the lower part of the condenser was covered by a strip of cardboard 7 inches deep. The effect of retaining this cardboard and in addition fixing below the condenser a piece of board 5 inches deep, with a piece of sheet metal 3 inches wide projecting backward along the lower edge, is seen in Fig. 3, in which the deflections before the alteration are marked in full lines, and those after the alterations are dotted. The effect is to throw the air downward, and the result should therefore be less satisfactory. Generally speaking, I think the front of a car is made sufficiently open to give good results, and need not generally be looked to for improvement.

The front mudguard might be expected to throw the air downward in a harmful way. As seen in Fig. 9, the effect is not very marked at twenty miles per hour; this may be accounted for to some extent by the fact that the guard is "flared." At higher speeds the air current would, no doubt, be more serious, and it may be worth while to have the guard supplemented by a deflector to turn the current; or in those cars where the guards are continued into a step, the guard might be cut short, leaving a gap, and the step prolonged a little so as to catch the air current and deflect it. Or a deflector below the step might be preferable, so as to avoid trouble from mud.

Passing to the back of the car, as shown in Fig. 2, we find a

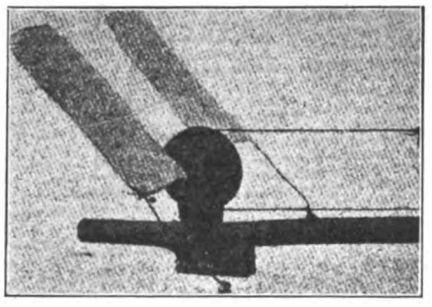


Fig. 5.—Deflecting End of Exploring Apparatus.

very much more disturbed state of affairs, as might be expected. Here the air may be traveling up or down, or even in the same direction as the car, and at a higher speed, depending upon the point selected. At about the level of the frame the air is evidently very much disturbed, and if the eddies that are present travel downward the dust must obviously be raised. The fixing of a wooden box, 8 inches deep, 8½ inches wide and 26 inches long, to represent a fuel tank, as indicated by the dotted lines, produced no appreciable change in the direction of the arrow above the step. The dust committee have already arrived at the conclusion that small transverse tanks are not harmful, though large tanks are distinctly bad.

It may be said that a car in traversing the air is followed by a

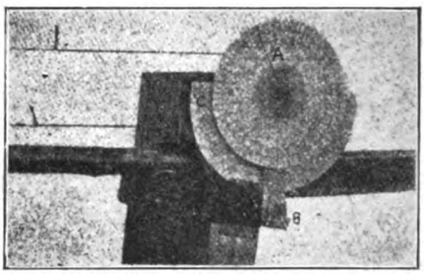


Fig. 6.—Recording End of Exploring Apparatus.

mass of eddy currents bounded by undisturbed stream lines, somewhat indicated in Fig. 4. If the space bounded by these lines could be filled up by a prolongation of the body there would be no dust raising. Such an innovation is, of course, impracticable, and if it were correct for twenty miles per hour it would be incorrect for higher speeds. Nevertheless, it should be borne in mind that the extent and character of this area must depend on the design of the car body.

From this point of view it seems important to be able to explore the air behind a car easily, and for this purpose I have found the instrument shown in Figs. 5 and 6 quite effective. It consists of a bamboo rod 6 to 8 feet in length. At one end, as seen in Fig. 5, is a light spindle carrying a small pulley and vanes of wire covered with tissue paper. This pulley, by means of elastic thread, drives an equal sized pulley at the other end of the rod. As seen in Fig. 6, the spindle of this pulley carries a pointer A, which moves over a circular scale, so that the deflection of the vanes at the other end can be seen at any moment. If the scale were fixed, readings would depend upon the inclination of the rod. It is therefore mounted loose on the spindle

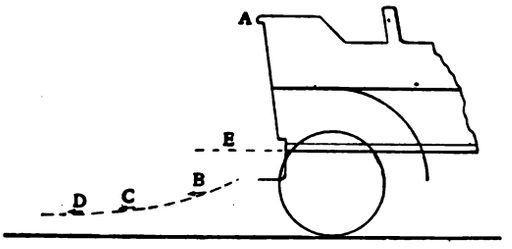


Fig. 7.

and weighted with a piece of metal B, so as to take up a definite position irrespetive of the rod. The inclination of the rod is indicated by a second pointer C, fixed to the rod, and pointing to zero when the rod is horizontal. The rod is marked in feet from the spindle at the other end. Thus, if it is desired to find the direction of the air currents at any point within, say, 6 or 8 feet of the back of the car, the apparatus is held over the back. The pointer A at once gives the direction of the air current, and the pointer C, together with the length of the rod that is projecting over the back of the car, gives the position of the point investigated relatively to the point on which the rod is supported. The circular scale has attached to it a cardboard sector passing through a brush so as to prevent the scale being too unsteady. Only currents in a vertical plane, that is, upward or downward in the vertical plane in which the car is traveling, are indicated.

With this apparatus I attempted to trace the stream lines behind the White car running at twenty miles per hour, the point of support being at A in Fig. 7. It was difficult to obtain any-

Digitized by Google

thing definite for the upper line, but three points were found on the lower line, as indicated by the arrows B, C, D in Fig. 7. Thus, with the range of the apparatus the lower stream line is somewhat as indicated by the dotted line through these points. It is noticeable that the line curves downward toward the ground, though, judging by Fig. 2, the upper part is probably more horizontal than here shown.

From the point of dustlessness it is desirable to keep the lower stream line up as high as possible. It seemed that this might perhaps be done, and at the same time the eddies separated somewhat from the lower and less disturbed strata of air, by fixing a sheet of cardboard in prolongation of the car frame and having the same width as the frame. This sheet was 3 feet in length, as indicated by the broken line E in Fig. 7. Examination of the air currents showed that the air was flowing

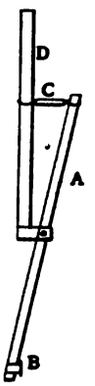


FIG. 8.

toward the back of the car near the end of the cardboard above it, and upward immediately below this point. The stream line within a range of 6 feet (the length of the apparatus) was very materially raised by the device, being about 18 inches higher than before. It seems possible, therefore, that cars might be rendered less dusty by modifying the construction at the back so as to give the form indicated by the broken lines at A in Fig. 4; with the now usual side entrance this form should present no difficulty, and, indeed, certain cars are already made with a projection of this kind, though not so pronounced as here shown. It is possible also that an extension of canvas or some such material in prolongation of the frame, and which could be removable, somewhat after the manner of the cardboard, might improve cars that are at present dusty; such a device would have the great advantage of simplicity and cheapness, and could very easily be applied.

A point that is often raised is how far should a car body or casing be off the road. Obviously a certain depth of air should be left undisturbed, and this raises the further question as to the extent to which a car carries the air along with it. This can be determined to some extent by measuring the air pressure at various heights. A simple apparatus for doing this is shown in Fig. 8. It consists of a pivoted lath A, carrying at the lower end a transverse lath B, seen end on, about 2 inches wide by 18 inches long, and attached to a light spring balance C at the upper end. The balance is also fixed to the upright D, which serves as a handle. By holding this apparatus immediately behind the car with the lath B crosswise to catch the wind, an idea of the pressure can be obtained. It was found that the pressure was only very slight at all points between the level of the frame and a point 14 inches off the ground (the frame being 23 inches off the ground). Calling the value of this pressure unity, then the pressure was found to increase rapidly until it reached a value 4 about 6 inches off the ground. It may be mentioned that the center line of the live back axle is about 14½ inches off the ground, and that the differential gear forms an obstruction in the center. The engine and petrol tank are the only serious obstructions under the chassis, as seen in Fig. 2. It would, therefore, seem that a good deal of air is carried along under the body, though it is difficult to hazard a minimum figure for the clearance, which must necessarily depend upon the character of the under surface. The fact that so much air is carried along explains why a small transverse gasoline tank has no bad effect on the dust raising qualities.

I do not wish to suggest that the methods here given are final, as the amount of dust raised must be the ultimate criterion of what is good or bad in design as a whole, but I venture to put them forward as methods which may be of use to the designer in deciding details in a preliminary way with a minimum of trouble. They have the advantage that they are valuable at any time of the year so long as there is quiet, fine weather.

FUEL INTRODUCTION IN TWO-CYCLE MOTORS.

Among the lines along which the improvement of the two-cycle engine is at present being sought, none is being more sedulously followed than that of scavenging the cylinder with pure air and the subsequent introduction of the charge of fuel. The furnishing of the scavenging air and the air for the mixture from the crank case (acting as a pump), and the introduction to the combustion space, near the end of the scavenging operation of the fuel in a liquid form, is the favorite method of attack upon this problem. A pump of very simple construction is adequate to introduce the liquid fuel into the cylinder at the proper moment, and the complication involved by this form of mechanical rather than automatic method of fuel admission is by no means prohibitory. It involves, however, when applied to small engines, the exact measurement and delivery of exceedingly minute quantities of liquid, even when a full charge is being called for. When the motor is delivering its minimum power the quantity of liquid required is much further reduced.

The method appears to involve a degree of delicacy very close to the limits of practicability when applied to vehicle motors from which a very wide power range is demanded.

An alternative method which is attracting some attention from inventors consists of the introduction of the scavenging air and a portion of the air for the charge from the crank case or other pump, in the usual manner, and the slightly later admision of the fuel in the form of saturated or nearly saturated vapor.

The movement of the fuel vapor calls for a pump of comparatively large volume, and it is a matter of no special delicacy to proportion the required amount of fuel. In the case of a multi-cylinder motor a distributing pump capable of timing and proportioning the charges of vapor to the cylinders can probably be worked out so as not to complicate the engine beyond reason. Some attempts have been made to perform these actions without the use of a separate pump by the employment of special port arrangements which provide for "pocketing" of the rich charge and for allowing it to move to the combustion space only after the pure air has been sent there. Without a carbureter capable of providing a very dense and at the same time well vaporized charge, there is difficulty experienced in supplying the requisite amount of fuel, and condensation in the pump is to be avoided. Schemes for two-cycle motor development are likely to be disappointing in their results, and their working out is always a slow and laborious problem. The importance of the problem is, however, such as to warrant the following out of every line which looks hopeful. An engine has already been brought out using the saturated vapor admission system, and the results thus obtainable may well be closely watched.—Horseless Age.

WILL ADD AUTOS.

David Bradley & Co., Council Bluffs, Iowa, have decided to embark in the automobile business, in addition to their regular implement and vehicle lines. The company will handle the Paterson, made by the W. A. Paterson Co., of Flint, Mich., at $1,400 machine made in three styles.

Digitized by Google

LIQUID GAS FOR WELDING AND LIGHTING.

Liquid gas is the latest product that has been brought forward as a useful factor in the autogenous welding of metals. It is obtained by the distillation in retorts of various materials, such as heavy oils, paraffin oils, crude petroleum and all of its products and residue. The vapors and gases thus produced are then passed through a tar separator and cleaner, which removes any deleterious or malodorous by-products that may be present, as well as the easily condensable gases, such as tar, benzine, etc.

The above is the same process that is used in producing any of the oil gases. To it has been added a special process invented by L. Wolf, of Besseldorf, near Zurich, Switzerland. This special process, by the use of cold and pressure, separates the difficulty liquefiable gases, such as hydrogen, methane, etc., from the more easily liquifiable ethane, propane, pentane, etc.

After the gas has passed through this special process it is charged into steel bottles at a pressure of from 1,200 to 1,500 lbs. per sq. in. This transforms it into a liquid, but when this high pressure is removed it immediately gasifies, and at the ordinary pressure of the atmosphere it is a dry inflammable gas. Only traces, not amounting in all to 3 per cent., are present, of carbon dioxide and air, and no acetylene nor carbon monoxide is present; hence liquid gas is non-poisonous, says E. F. Lake in the American Machinist. This enables it to be used freely for welding or lighting without any injurious effects.

The limit of explodibility of liquid gas is fixed between a mixture of 96 per cent. of air to 4 per cent. of gas, and 92 per cent. of air to 8 per cent. of gas, which is a range of 4 per cent. Ordinary city coal gas has a range of explodibility of 13 per cent., which is from 6 1-3 to 19 1-3 per cent. of gas with the balance air, and the explosive range of acetylene is 49 per cent. Thus, liquid gas is three times less explodible than coal gas, and 12 times less than acetylene.

The specific gravity of liquid gas, as compared with air at 1,000, is 1.027; hence it is heavier than air and mixes with it with difficulty, and this reduces the danger from explosion. A hotter flame can be produced by combining liquid gas with oxygen in a torch than with any of the other known gases. Thus the oxy-liquid-gas flame develops 7,000 deg. F., while the oxy-acetylene flame gives 6,300 deg. and the oxy-hydrogen flame produces but 4,800 deg.

This is due to the fact that there are 2,500 more thermal units per cubic meter in liquid gas than in acetylene gas. While the hydrogen flame is very wide and, therefore, loses much heat by radiation, the liquid-gas flame is short and pointed, with a cone-shaped center like the oxy-acetylene flames. In using the gas it is bought from the manufacturer in a liquid state in steel bottles at a cost which about equals that of coal gas at $1 per 1,000 cu. ft.

The apparatus for welding consists of a gas bottle connected to an expansion tank by piping. When the gas is wanted it is allowed to flow into the expansion tank, by opening valves until any pressure desired up to 60 lbs. per sq. in. has been reached. The valves are then closed and the gas used out of the expansion tank. If the 60 lbs, pressure should be exceeded the gas will escape through a safety valve.

An automatic pressure regulator is also supplied with the tank. The only other things that are necessary for welding are torches and a supply of oxygen from a steel bottle.

The welding torch that is used with liquid gas is much simpler than those used for oxy-acetylene welding, as there is no danger of backfiring owing to the very low explosive properties of the gas. This does not make it necessary to add any mechanism to the torch to prevent backfiring. It consists of an air chamber in the end for the purpose of keeping the handle cool, and the torch can be kept in operation for hours at a time without any sign of over-heating.

The gas and oxygen are passed through this air chamber from the rubber hose into the mixing chamber, which occupies the front half of the body of the torch. At the rear of this chamber the gas is carried out through a pipe that is coiled around the stem of the torch. This is for the purpose of warming the gas before it is used. Oxygen passes out of the forward end of this chamber through another pipe that meets the gas pipe at the nozzle of the torch. Through the central stem is carried the mixed gas, and the three are all combined at the nozzle, thus forming a good mixture for combustion.

With this torch but three tips are needed for welding or cutting any kind or thickness of metal.

When cutting metals it is not necessary to coil the pipe around the stem to warm the gas, and, therefore, the gas and oxygen are piped into the mixing chamber and carried out through the stem to the work.

As with other torches, an extra jet of oxygen is necessary when cutting metals to localize the heat and remove the burnt products. The lower tube on this torch carries the extra jet of oxygen to the work and makes it strike just ahead of the flame.

Cocks are located on the gas and oxygen pipes, immediately behind the torch so that they can be opened or closed by the thumb or fingers while holding the torch and cutting the metal with it. This makes it a very handy torch, as the liquid gas and oxygen can be regulated without stopping work.

It is said that steel and iron up to 14 in. in thickness have been successfully cut with this process at the works in Switzerland. There is practically no loss of metal in cutting it in this manner, as the cut is no wider than would be made with a saw, and the metal is not perceptibly heated on either side of the cut. Steel 2 in. wide and ¾ in .thick can be perfectly cut in less than a minute and cuts in thicker metal are made in so short a time as to be almost unbelievable.

Liquid gas is also useful for soldering and brazing, and for this kind of work no oxygen is needed. The brazing torches are made with interchangeable tips that will produce any size of flame desired. For paint scrapers, plumbers' tools and many other things of a similar nature that require heat, similar torches are fitted up.

Broken castings, such as sprocket wheels, pulleys, and cracked valves, can be quickly repaired by the welding torch, thereby avoiding the delay consequent on writing for new parts to be cast and machined. Steel is welded more successfully, as it is much easier to weld than cast iron by the autogenous processes that develop even less heat than this one. Brass, bronze, aluminum and other metals are also welded satisfactorily with this process.

Owing to the fact that liquid gas is shipped in steel bottles, the same as carbonic-acid gas or oxygen, it is very useful for lighting shops that are located away from a gas supply, as well as for any other kind of a building, or for outside lighting, and for lighting vehicles.

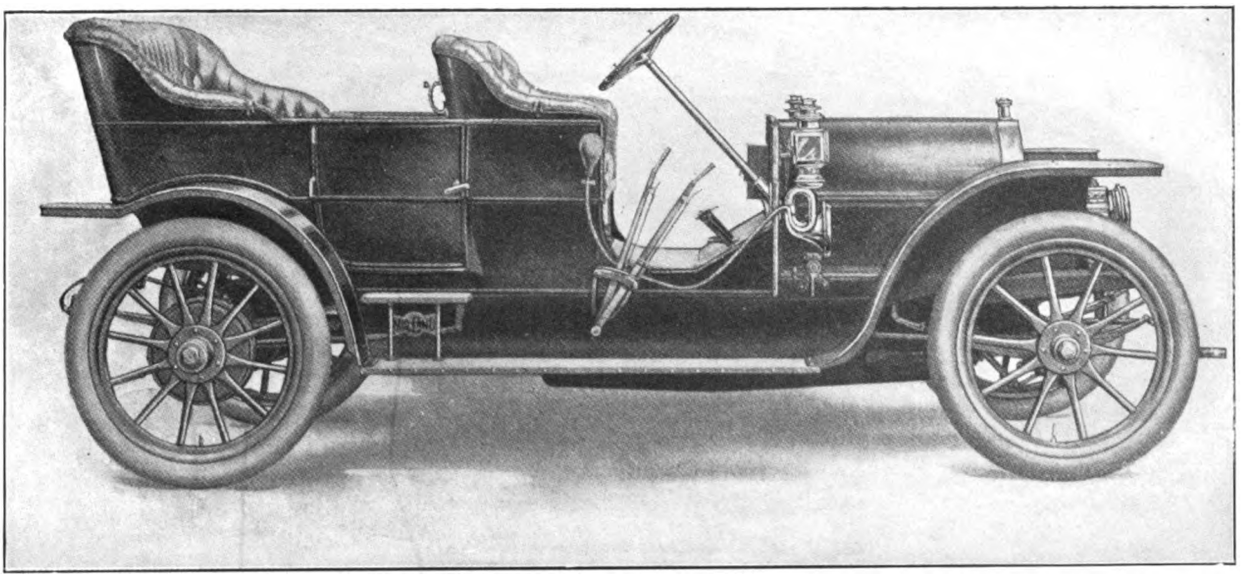
The cost of the gas used by a 44-candle-power mantle lamp is 0.75 cent per hour; and for a 220-candle-power lamp, 2.5 cents per hour.

AUTO MANUFACTURERS KILLED.

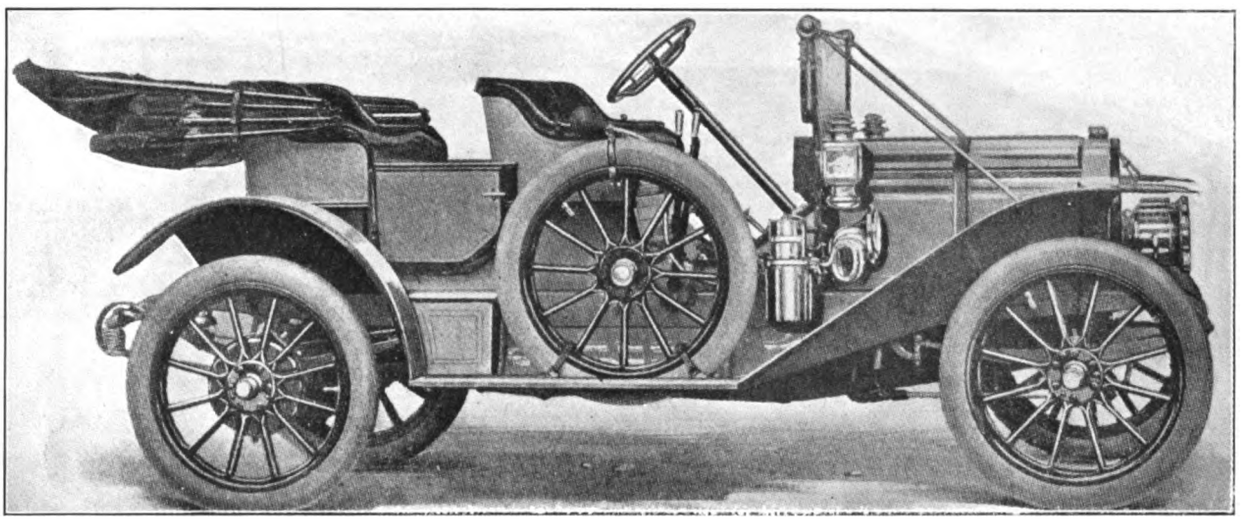
Leon R. Lyle, of Dowagiac, Mich., and Frank A. Lake, of the same city, both of whom were prominent members of the Dowagiac Motor Car Co., were instantly killed in an electric car accident near Chesterton, Ind., on Saturday night, June 19. They were returning from the automobile races at Crown Point, Ind., when the accident occurred in which both lost their lives. Mr. Lyle was 27 years of age, and an only son. His father, F. W. Lyle, one of the promoters of the Dowagiac Motor Car Co., passed away a few weeks ago. The concern promised much future success. Mr. Lake was a warm personal friend of Mr. Lyle, and both were often together. Nine other persons were killed as a result of the accident.

Digitized by Google

Illustrated Automobile Section, July, 1909

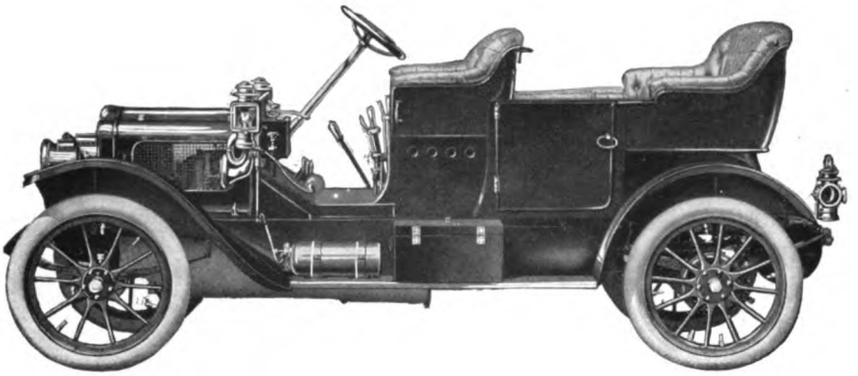


PACKARD "THIRTY," SEASON 1910.
Built by Packard Motor Car Co., Detroit, Mich.



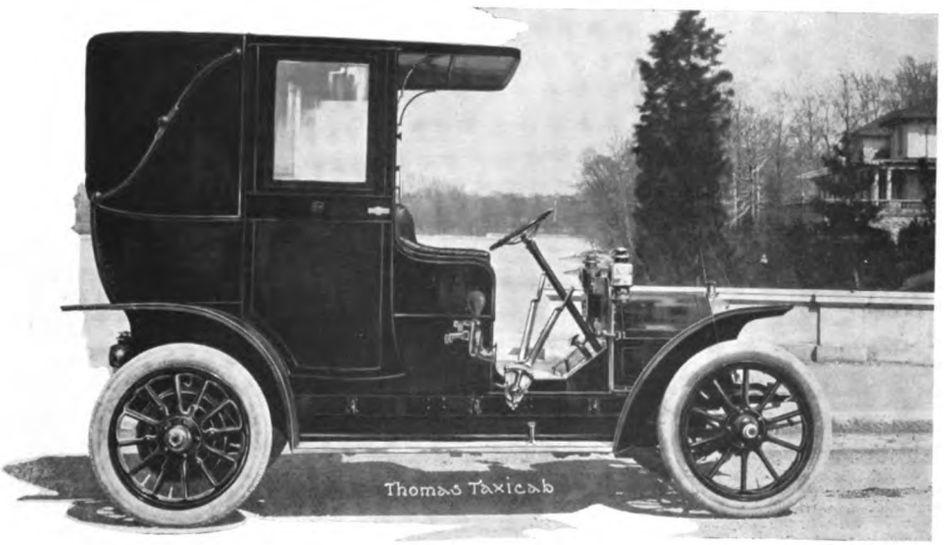
FOUR-PASSENGER CAR WITH SPARE WHEEL.
Built by Thomas B. Jeffrey & Co., Kenosha, Wis.

Digitized by Google



20 H. P. WHITE TOURING CAR.

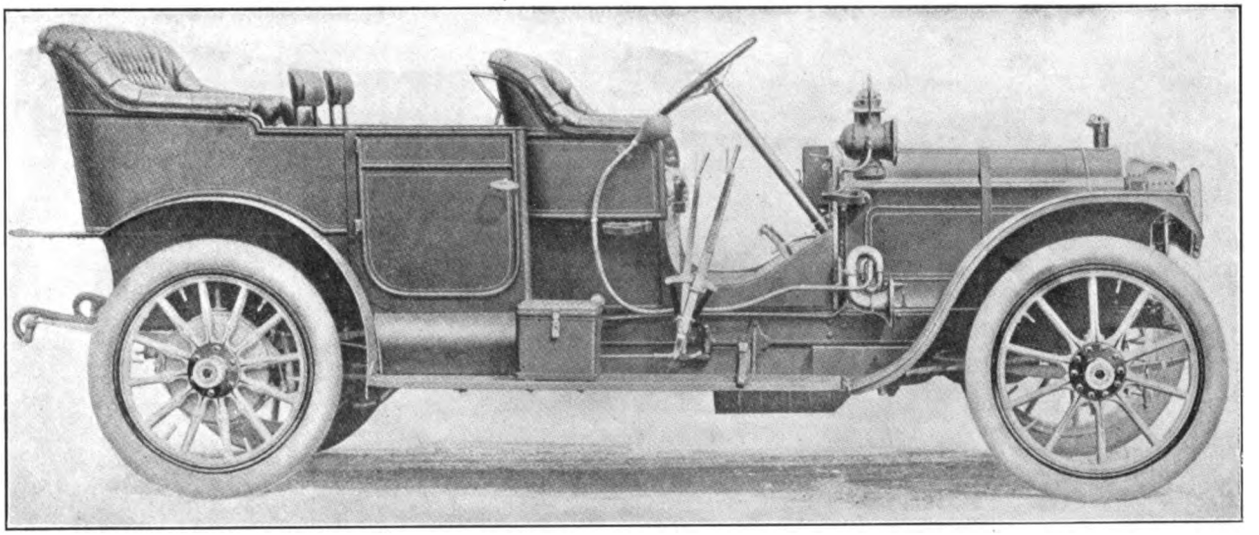
Built by the White Co., Cleveland, Ohio.



MODEL TAXICAB.

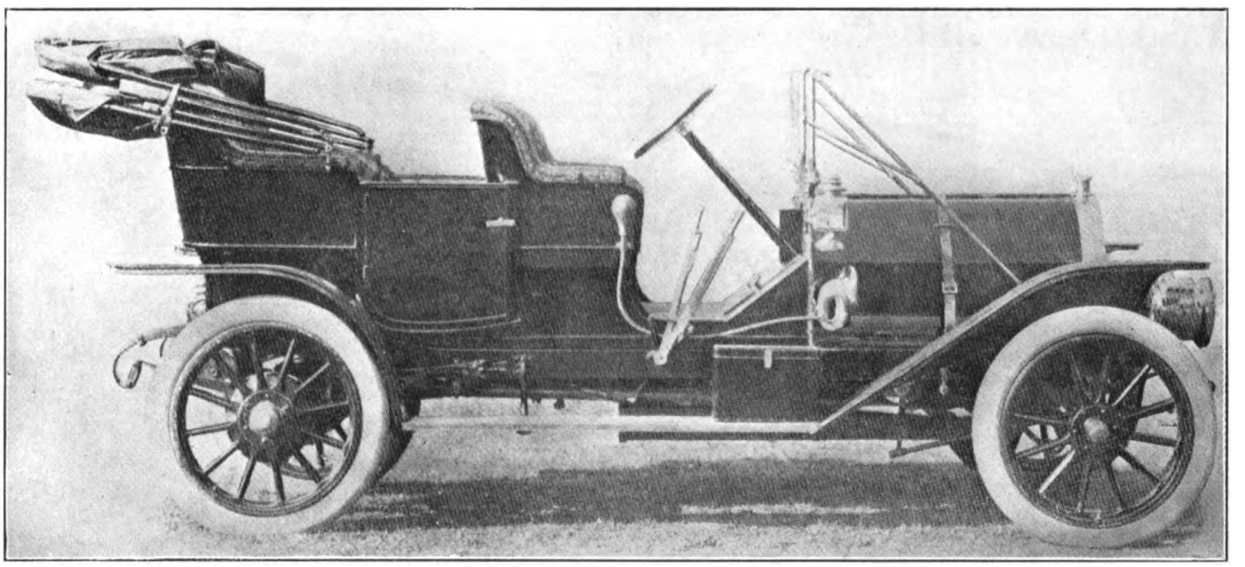
Built by E. R. Thomas Motor Co., Buffalo, N. Y.

Digitized by Google



FIVE PASSENGER TOURING CAR.

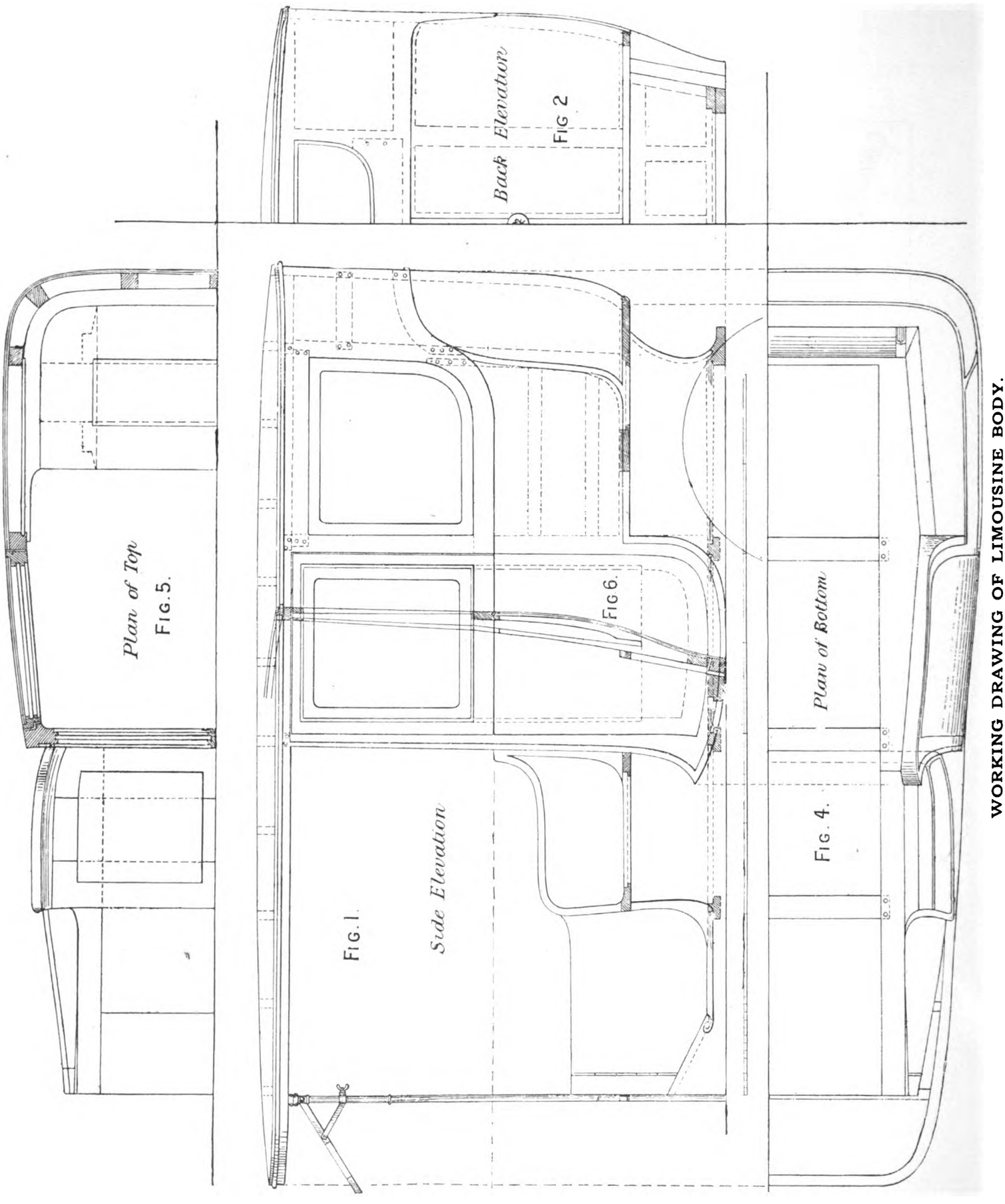
Built by Midland Motor Co., Moline, Ill.



MODEL 35 KLINK SIX-CYLINDER.

Built by Klink Motor Car Mfg. Co., Danville, N. Y.

Digitized by Google



WORKING DRAWING OF LIMOUSINE BODY.
Described on opposite page.

Digitized by Google

Body Construction and Finish

WORKING DRAWING OF LIMOUSINE.

(From Motor Car Manufacturers' Journal.)

The working drawing shown on opposite page is of a limousine for a 9 ft. 6 in. chassis. The special features of this design are the round corners of the back panels, the side lights and the increased width across the hinge or standing pillars which gives accommodation for three passengers on the seat, and if the new channel seats are fitted on to the front casing five passengers will find room to sit vis-a-vis.

All the panels and mouldings are of aluminum, the arrangement of the mouldings on the hind quarters gives the body the appearance of a handsome side-lighted brougham plus the round corners.

From experience the best wind screen for this type of car has been found to be the screen that folds inwards and outwards

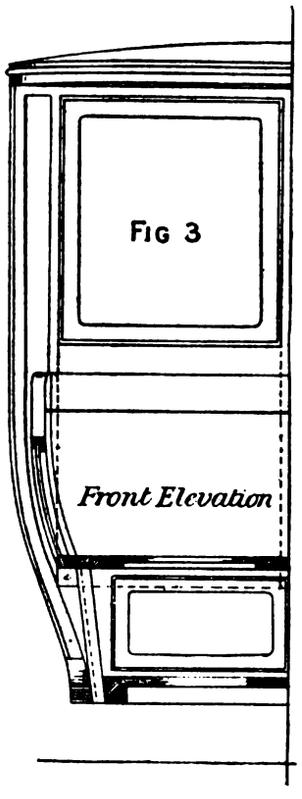


FIG 3

and fastens to the roof, leaving the front of the car open, thus if the front and side glasses are down the air passes right through the body, but in a storm or blizzard the front screen is extended outwards and the canopy which is extended a foot over the glass screen protects the glass screen from the sleet and rain. It will also be noticed that this screen sloping outwards creates a vacuum, and although the car may be traveling at a high rate of speed no sleet or rain will pass through the space between the lower and the upper half of the screen, thus the driver can see the whole of the road in front of him without any inconvenience being caused from the sleet, rain or dusty roads, and we should thoroughly recommend all our readers to persuade their clients to have screens of this description fitted to their cars. There are a great number of simple and effective fittings which will enable the coach builder to supply his client with a reliable screen of this description, but care should be taken to select a screen that has no opening between the canopy and the top of the screen or the screen will not prove so effective.

The construction of this body is of necessity similar to those previously described, but instead of the framed boot sides, solid birch sides may be used. All the framing should be of ash, but we have noticed that in a great many instances the front standing pillars have been made of mahogany or beech, this we believe is caused through the scarcity of thick dry ash. The bottom sides are cut from 2 in. ash, and the width at the hinge pillar is 6 in., and tapers at the shut pillar to 3 in., and to the hind cross bar to the same width, this enables the builder to construct the body much lighter, and also gives 6 in. additional room in the interior. We hope the builders will examine the construction, as it will enable them to plan a much more satisfactory interior by reducing the pillars and rockers, and also, which is more essential, the cost of building. The rockers should be cut from 2½ in. ash, the half-round moulding being worked in the solid, these rockers should be screwed from the outside to the bottom side, and may be done in the following way:

Bore the holes half way through the rocker with a center bit the size of the screw head, then countersink the bottom to the shape. After the screws have been fixed in for the last time make a cross grain plug cut from the same timber as the rocker and turn to fit the hole tightly; then fix it in with a good glue, care being taken that the grain of the plug and the rocker are the same. When the glue is dry clean off the plug head and it will be found most satisfactory.

The hinge pillar is cut from 3½ in. ash and half-lapped into the rocker, being carried the full depth of same, and screwed from the inside with five or six No. 16 screws.

The boot or well sides can be screwed to the bottom side from the outside, the heads of the screws being covered in the way described above, or by a moulding 1 in. by 5-16 in.; as there is no boot door a fillet piece can be screwed from the boot side, and the hind panel, which should be of mahogany, pinned to it, the hind crossbars on the top of the boot sides should be 1½ in. by 2½ in. and half-lapped into same.

The hind seat bars are cut from 1½ in. by 1¼ in. ash and finished 1⅛ in. The side bars form the short bottom sides, which are mortiched into the standing pillars and screwed from the boot sides.

The corner pillar is cut from 2 in. ash stump tennoned into the seat framing and screwed from underneath. The top is tennoned into the cantrail and pinned. These, together with the hinge pillars, are rabbeted for the glass frame, and the side center rails are half-lapped and screwed to them from the outside. The back battens and pillars are cut from 2½ in. ash, and half-lapped to the seat and center rail, the corners of which are usually made from 1 in. bent ash, but these, of course, can be cut from the solid, but it would be found to be necessary to cut them from 5 in. or 6 in. timber.

The cantrails are cut from 1½ in. ash, the hoopsticks 1⅛ in. by ⅞ in., and are framed in and screwed in as usual. The shut pillars are framed up as in a brougham, but it will be found necessary to cut them from 4½ in. timber as the turn-under is very considerable and care should be taken in boxing out for the front glass frames so as not to get the timber too light on the face of the pillar. As there is only one front window it will be found very heavy for a lady to lift, and we should advise the coach builder to fix in an automatic lift which greatly assists the occupants of the car in raising the glass frame, and the cost is so slight that we think it would be greatly appreciated by their clients.

Digitized by Google

The door framing is cut from 2 in. ash and the center rail is 5 in. in width. A good slam lock with a new pattern bolt should be used, and a private lock is fixed in the pillars. A simple catch may be fixed to the windows to prevent them being opened from the outside when the car is in a garage.

All panels are of aluminum and of No. 18 gauge, the bottom back panel being beaten into shape, the top is cut from one piece and screwed to the frame with brass screws, all mouldings other than those cut from the solid wood are of aluminum, and must be screwed on with brass or aluminum screws.

The roof and extension canopy are of three-ply wood and covered with moleskin, the edges being fixed down with 1 in. by ⅝ in. cornice. The bottom of the front seat is framed and the sides cut from ¾ in. bent birch and with mouldings pinned on.

In this design is shown a deep front reaching to within 3 in. of the elbow line; this door should be made of very light framing and panelled with aluminum, a ⅞ in. half-round moulding could be fixed round the bottom and sides, and if this is left a ¼ in. over the joint it would form a lap plate for same. A small slam lock with a lever at the top is generally fitted to this door, a block about 1½ in. by 1 in. is screwed to the dash and the door is hinged to this, the side of this door is generally covered with a piece of plain leather.

Side Elevation.—Length of body set off on chassis, 8 ft. 6 in.; length from dash to front of driver's seat, 2 ft.; length of driver's seat, 1 ft. 9 in. Width of door between driver's seat, 2 ft. Length of brougham body on elbow line from back of front pillar, 5 ft. 2 in.; length of extension roof canopy, 4 ft. 10 in. Depth of rocker, 1 ft. ½ in.; depth of body quarter, 1 ft. 6 in.; depth from elbow line to roof line, 2 ft. 2 in.; depth of body in center of door, 2 ft. 7 in.; depth of driver's seat in middle, 1 ft.; depth of driver's seat at back, 1 ft. 6 in.; depth of door between driver's seat, 1 ft. 6 in.

Front Elevation.—Width across driver's seat over all, 4 ft.; width across driver's seat at top, 3 ft. 7 in.; width across driver's seat on elbow line, 4 ft.; width across rocker at top, 3 ft. 3 in.; width across rocker at bottom, 3 ft.; width across brougham front pillars at elbow line, 4 ft. 3 in.; width across brougham front pillars at toe, 3 ft. 5 in.; width across brougham front pillars at roof line, 4 ft. 4 in.; width across windows over frames, 1 ft. 8 in. Depth of windows over frames, 1 ft. 10½ in. Width across the bottom over all, 3 ft. 4½ in.

Back Elevation.—Width across rockers at bottom, 3 ft. 4 in.; width across rockers at top, 3 ft. 8 in.; width across body at turn up of elbow, 4 ft. 6 in.; width across body at elbow line, 4 ft. 8 in.; width across body on seat line, 4 ft. 3 in.; width across top at roof line over all, 4 ft. 9 in.

WHY NOT AMERICAN WIRE WHEELS?

The unusual and continued success of the wire wheel on the other side, particularly in England, where they are much in vogue, draws attention to the fact that practically none is used in this country, the only maker having "stuck" to them in the past having now changed so as to offer wood as an option.

What is the reason for this apparent apathy on the part of the American public, always so attentive to foreign successes, toward the wire wheels? It is urged in their favor that they possess extreme light weight and much strength; in fact, weight for weight, it is possible to carry a much greater weight upon wheels of this type. Now the modern tendency is substantially toward the smaller car, with less carrying capacity, and, of course, light weight. Fuel consumption is becoming of much more importance each season, and increased useless weight means higher fuel consumption, without a doubt. Why, then, do not many of us arrive ultimately at the two-cylinder car with vertical motor of about 12 horsepower, selling below $1,000, and fitted with wire wheels?

Surely, if a car weighing perhaps 5,000 pounds and equipped with a motor of 75 horsepower, like the Napier, can go through season after season, on wire spoked wheels, without serious trouble, the efficiency and durability of this form cannot be questioned.

It is urged against the wire wheels that they have no strength to resist side strains, yet the little Cameron racer at the Savannah races last fall stood practically upon two wheels with the other two in the air, while going along at the rate of sixty miles per hour, without any damage whatever, which does not sound very weak.

In England, where they attain their greatest popularity, a new detachable wire wheel has just been brought out, which seems to make that form even more popular than at present, if that is possible. Yet England is a great country for little and economical cars of 10 to 15 horsepower. If this form of wheel wears out as quickly as claimed, why is it that so many of the economically inclined Englishmen use that form?

Wood wheels have been the subject of study for perhaps one hundred years, and by a gradual process of elimination the faults have been reduced to a minimum. The so-called bicycle wheels, on the other hand, have been in existence not over one-fourth of that time. Who shall attempt to say, then, that with equal attention to materials, design and construction, the wire form may not retrieve all of the faults laid at its door and become as efficent and as popular as its competitor, the older forms?

One large item even now worthy of consideration is the great and growing trouble of obtaining suitable materials for the spokes and felloes of the usual artillery wheel With wire, on the other hand, there probably never will be a scarcity of proper materials.—Automobile.

THE GRAY MOTOR CAR—POPULAR PAINTING PROCESSES.

Already in these columns attention has been directed to what was then termed the coming popularity of the gray motor car. The prophesied popularity is already here and everywhere in towns and cities and along country thoroughfares the gray machines flit past like apparitions. It is manifest, too, that the lighter grays, with tone and buoyancy to them, are the favorite members of the family.

The deeper grays, considerably in favor last year, have fairly become obsolete. They were to sombre and monotonous, anyway, and the most enticing striping effects failed completely to give them the desired touch of life.

These lighter grays, however, are different. They have sparkle, and the redeeming capacity or reducing the apparent size of the surface to which they are applied. We believe all light grays are best displayed over primary surfaces approximately pure white.

These white or nearly white grounds fortify the final coats against premature discoloring and counteract bleaching propensities generally, all of which constitutes a service of exceptional value.

For the motor car body to be brought up from the wood with a gray of light tone, coat up with a priming material carrying white lead as the sole pigment ingredient. Make the next coat of white lead only as the pigment. Put on this coat with a solid white, quick drying putty, glazing open grain splotches with this same putty let down a little with turpentine.

Above this, in due time, apply at least four coats of roughstuff made up, if shop prepared, of dry white lead and No. 00 pulverized pumice stone, equal parts, adding pulverized soapstone in a quantity to equal that of both the pumice stone and white lead. Mix in equal parts of turpentine, rubbing varnish and coach japan. Apply one coat per day. If prepared, buy ready-for-use the white, or practically white, roughstuff which paint makers supply. Over this foundation lay the gray pigment in its final color. Use the palest varnishes procurable above these pale gray pigments, and stripe with fine lines of various shades of blue, or with fine lines of black and gold. The quietest striping effects are desirable upon gray surfaces.

Digitized by Google

CLEANING UP AND VARNISHING THE AUTOMOBILE.

The profits to be derived from the above work depend a good deal upon the location of the vehicle in the shop. Good light is essential, and it should be had upon three sides, or, rather, two sides and one end, at least.

The location, further, should be where plenty of effective ventilation can be enjoyed. Light and ventilation are indispensible. The price to be received for the work will govern, or should, the extent of dismantling done upon the machine. Some automobile owners are as crafty and as given to "jewing" down the painter, when it comes to a consideration of price, as the historic gentleman from the village of Way Back.

In all such cases, and as a last resort, of course, one must cut the cloth to fit the price. The automobile, it may be pertinent to mention here, is a vehicle deserving close inspection before making an estimate of labor and material values. One machine, for example, may clean up easily and admit of quick work throughout, whereas the second one will give the painter all kinds of trouble in scouring up almost inaccessible parts, and later in giving them a dip of enamel or other material.

Having located the machine in the most favorable part of the shop, proceed to remove the mud guards and such other parts as actual necessity may impose, or as the price set for the work seems fit, and then with scrapers, putty knives, waste, burlap, etc., proceed to clean the under parts.

Paraffine oil, benzine, gasoline or naptha have been and are being recommended as grease detergents and cleaners, but personally we believe that turpentine, at the greater price quoted per gallon, is the cheaper fluid for cleaning, being quicker and more effective. As a matter of fact, we should prefer some of the advertised turpentine substitutes over gasoline or paraffine oil. There are some parts of the underneath mechanism which seem to defy all ordinary cleaning processes, and for all such we should use either sal-soda or lye in the water in a sufficient quantity to just lick off the grease after saturating the parts with the solution and rinsing with clean soft water.

Then with a perforated felt rubbing pad, moistened and dipped in No. oo pulverized pumice stone, go lightly over the body surface to knock down the dirt knots, if any, and to remove the scum and grease accumulations. Wash out the interior of the body thoroughly, after rubbing the exterior, and then with soft sponges, water, tools and plenty of clean soft water wash the exterior surface of the body perfectly clean. Run over the exposed surface of the chassis with a rolled tuft of broadcloth, moist and dipped in pumice stone, as above, after which wash with clean water carefully. Now, for a close examination of the surface to determine the amount of touching up required. Note meanwhile to what extent the colors have faded. How have they faded? In a word, get an accurate summary of all the surface conditions. Then go forth to the mixing bench and match up the color, using enough varnish to hold up the color in at least a semi-gloss state, otherwise the absorption of light will cast the color off its true shade. The least possible touching of the surface, because of its great length and breadth, the better, for it is rarely the case that the color can be matched so closely as to deceive the average man who is not color blind. And a little dot of off color upon a big, roomy surface will illuminate things at a great rate. Hence the admonition "touch only the absolutely established defects." Moreover, touch lightly, make the spot as small as possible, avoid a coarse, thick edge, and depend upon the varnish to drown out the minor disfigurements. This is about as far as written directions can go. The painter must use his own skill and judgment, and his knowledge of local circumstances and conditions to meet the other emergencies likely to arise in connection with every shop visiting auto. In case of a surface badly faded and off color, touched up with but little striping, stir in a little of the match color, or the original color of the surface, into enough elastic rubbing varnish to go over the surface, and coat in solidly. Use just enough color to stain the varnish lightly and restore a uniform shade throughout the surface. Brush the shine off this coat with a sponge moistened and fleched in pumice stone flour, then wash up and finish with a strong, rich flour of finishing varnish. Coat up all other parts properly. Aim to make the job a good one.

FIRE PRECAUTIONS FOR THE AUTOMOBILE PAINT SHOP.

Since all automobile paint shops are not located in the gasoline scented garage, it behooves the proprietor to make effective all available fire precautions. Gasoline, naphtha, benzine and kindred highly inflammable fluids, which appear to invade the automobile paint shop freely enough, especially the first named, add an element of danger which no one can afford to trifle with. The first consideration is insurance. The proprietor of the paint shop, whether he be the owner of the building or a more or less temporary occupant under the terms of a lease, should carry adequate insurance to protect him against loss, otherwise he is taking a chance which no business man worth mentioning in Dun's or Bradstreet's columns would think of assuming. An insurnce policy having been woven into the warp of paint shop fabric, the next move is to install a systematic fire protective arrangement under the terms of which each employee is to consider himself to a certain extent responsible for the safety of the building in which he is employed, and for the safety of his fellow employees. Both the spirit and the letter of the rules laid down for the prevention of fires must be observed, which, of course, cannot be made possible except through the hearty co-operation of all parties concerned. Whatever the restrictions in regard to the storage or use of gasoline on the premises may be, they cannot well be too diligently observed. There is an ever present element of danger attached to the use of gasoline, naptha and benzine, and when these are present, or being used in any form, the premises should be safeguarded in every possible way.

Spontaneous combustion is naturally native to the automobile paint shop, and it lurks ready for an unexpected spring. The oil, fluid and grease saturated waste, rags, burlap and other fabrics employed in cleaning up the horselesss leviathan, are active and aggravated mediums through which spontaneous combustion is coaxed into destructive activity.

And yet how easily may these mediums be rendered void, and their capacity for doing damage destroyed.

Two or three tall metal pails, or more, as the size of the shop may suggest, should be distributed about the shop, into which the refuse waste, cloth, etc., may be thrown. The rule in regard to depositing the dirty and oil saturated and grease clogged fabrics in these pails should be rigidly enforced, and when so enforced spontaneous combustion will practically become an unheard of thing. This subject of fire is an old one, and not infrequently alluded to, but it is of such vital concern to all paint shop inmates that it merits repeated discussion. Only recently the writer has heard of two or three automobile shop fires said to have originated in the paint shop, and one of these, we believe, has been traced directly to spontaneous combustion.

In every paint shop of some pretensions an employee should be detailed to daily, just before quitting time, go carefully over the shop and pick up any scraps of sandpaper, waste, cloth, etc., which, through an oversight, may have been left laying about outside the specified receptacles. In this matter eternal vigilance is the price of fire immunity.

The O. K. Bus, Baggage and Carrige Company, of Oklahoma City, has asked for an increase in its capital stock from $1,000 to $60,000.

Digitized by Google

WIRE WHEELS.

We have read with much satisfaction your editorial on the interesting subject of wire wheels, writes H. W. Doherty, of the Cameron Car Co., in The Automobile. It is really hard to explain why the public will take such slight heed when approached on the subject of wire wheel equipment. We have regularly listed one of our models this season with wire wheels, and as any opportunity presents itself we try to explain their advantages—but to scarcely any purpose, as with but eight or ten exceptions our purchasers of this model have all insisted on artillery wheel equipment. Not only is the wire wheel stronger under all conditions, and a tire saver because of its resiliency, but it adds fully 25 per cent. to the riding qualities of the car. The writer recently made a trip of 220 miles in one of our "Featherweight Flyer" models, equipped with wire wheels, and a few days later went over practically the same ground with one of these models equipped with artillery wheels, and the difference in the riding of the two cars was simply astonishing. The wire wheel is considerably more expensive to build, but if the public would accept them we would so equip every car turned out, as the saving to the user on tires and on all parts of the mechanism of the car equipped with wire wheels would be hard to estimate fully.

The writer calls to mind an occurrence in the early days of the industry which demonstrated the effect on tires most conclusively. (I may be wrong as to absolute dates and figures, but the substance is correct.) About 1902 the Oldsmobile Company, in response to public demand, changed over from wire to artillery wheels on their small curved dash runabouts. As I remember, they were using a 28 x 2½ single tube tire. These tires gave good satisfaction on the wire wheels, but when placed on artillery wheels I know of cases where they absolutely went to pieces in six or eight weeks' time, and the company was obliged to increase the tire size in order to give any kind of satisfactory service. We are using every endeavor to induce our customers to specify them, and firmly believe that they will again come into general use within the next two years.

ALUMINUM VERSUS WOOD BODIES.

(Contributed.)

Actual weight upon the scales disclosed that an all-wood finished body weighs less than any aluminum finished body, properly made. Wood withstands blows better than aluminum; is stiffer; does not show disintegration so rapidly; wears very much longer, and takes a higher finish. It does not require more painting; but you put more on than on aluminum bodies, which can be skinned as any metal body may, to the detriment of the metal used, as paint is not only a beautifier but a preserver of what it covers.

Wood is necessary in the building of an aluminum body, as by itself aluminum would not do any service. Iron is frequently used to stiffen it, which weighs more than wood. Aluminum is ductile, will not stand the vibration, and is liable to show the effects of blows and use: an all aluminum body shows the twisting, whether the mouldings are of wood or metal, and paint will not stay upon them.

Nearly any metal worker can make an aluminum body of some kind, for beauty need not enter into its construction, but it takes a fine draftsman and splendid workman and beautiful wood to produce a good wood body that is symmetrical in form, beauty and finish, good, strong and serviceable, and such a body will outwear many chassis, as has already been proved.

By the use of machine, et cetera, aluminum bodies can be built in quantities, all of them having the same size and the same characteristics, and made to fit on a chassis to be bought by anybody, rather than somebody who wants an automobile for his personal use, to be comfortable, durable and beautiful. The best carriage builders in this country use wood whenever it is possible, but the best method is to use aluminum upon seats and bent quarter panels, where it can be hammered to make a certain form that is difficult to make of wood, that is, where the curves are beaten into the metal horizontally and vertically, then a heavy aluminum is used carefully and properly hammered and hand filed to match the wood. This is the best, most expensive practice, and is used on quarter panels of aluminum and on the round seats of a touring car. Then in making this kind of a body, great care is taken that the mouldings shall protect the aluminum, and that water will not be allowed to get into the aluminum, in order that it may not disintegrate or be eaten into powder.

Because of the trouble carriage builders in Europe have had with aluminum disintegrating in their bodies, sheet steel is very largely used where wood is not used, and aluminum is rapidly being discarded. While the sheet steel is much heavier, they do not have so much trouble with the body apparently as with the aluminum.

Regarding the painting of the wood and aluminum body, anybody can see by examining the work in the shops of New York, that the wood body is a more beautifully painted one, including the aluminum panel, which is also painted, for the whole finish of the car is exactly the same, and it is painted the same, and no attempt is made to shorten the time of painting, nor cheapen the cost. More and more are the wooden bodies being used, especially among the best builders. In fact, aluminum is rarely used by the cheaper builders at all; nearly every one who claims to sell a metal body is selling a sheet metal body, and that is done because they can be made for less money, and they put them in frames and press out the whole thing, doors and all. Of course, work cannot be properly turned out in that way to satisfy a customer, in beauty, durability, comfort or finish, and, of course, is very much heavier.

Brewster & Company use all wood; Healy, Flandreau and Demarest, wood and aluminum, as the style of the vehicle calls for.

MAXWELL-BRISCOE CO. BUYS ANOTHER FACTORY.

The Maxwell-Briscoe Motor Car Company will shortly move from the plant which it has occupied in Pawtucket, R. I., for four years to Auburn, R. I., where it has purchased the works of the Auburn Rubber Boot and Shoe Company. This factory was secured for $200,000 and is being remodeled so that the capacity will be twice as many automobiles as the present situation affords. The output at present is 2,000, employing about three hundred men, but at Auburn it is estimated by the factory officials, fully 4,000 four-cylinder cars will be built annually. The Maxwell output for 1910 will exceed 22,000 cars.

ELECTRIC CARS FOR NEW YORK POST OFFICE SERVICE.

Postmaster Morgan, of New York City, announces that for all postoffice districts north of Forty-second street, on the east and west sides of the city, the horse and wagon service heretofore used in the transportation of mail between stations has been superseded by a fast electric motor service.

RUBBER SHIPMENTS.

Consul George H. Pickerell reports that during the month of April 4,156,004 pounds of rubber were shipped to the United States from Para and Manaos, against 2,297,115 pounds in the same month of 1908. The shipments to Europe were 5,191,292 pounds, against 4,444,488 pounds.

Digitized by Google

OVER PRODUCTION REPORTED ABROAD.

Stringent Laws and Great Increase in Number of Taxicabs Adversely Affect Industry in France.

Conditions radically different from those in America exist with regard to the automobile industry in France, according to A. E. Schwartz, the foreign representative of the American Motor Car Manufacturers' Association, who recently returned from Paris.

"The reason why this wonderful business is failing to go ahead—in France, at least—is in a measure because of the police, who arrest automobilists for the most trifling offence. If your motor emits a little bit of smoke, that is sufficient to cause the taking of your name and number and you are fined fifty francs.

"Then there is a taxation on each horse power and every seat in the car; five francs each seat and five francs for every horsepower.

"Another reason for the decrease in the number of private automobile owners is the taxicab. Until April 1 of this year there were eleven different tariffs in use, and it was necessary to study all the different colors and types of taxicabs in order to know how much it would cost you to go a certain distance. Since that date there has been a great change for the better, and there are only four tariffs now allowed by the police.

"The cheapest tariff is thirty-three centimes a kilometre, and you can even hire them for two francs an hour, which means fifty cents an hour for a cab that will accommodate four persons. This, of course, is a great inducement for everybody to use them, and naturally one reason more for the owner who uses his car only in the city to sell."

THE AUTOMOBILE AND THE IMPLEMENT AND VEHICLE DEALER.

The Implement and Vehicle Journal, of Dallas, in discussing the question of implement and vehicle dealers handling automobiles, makes the following pertinent remarks in a recent issue:

There has been a tendency to hesitate in taking hold of the trade, because it lacked "trying out." In his holding back the dealer has lost ground and his prestige has been shaken. He has hesitated, too, because automobiles cost too much money to buy and to handle, if the outcome should be a fad, which should soon "have its run," and leave him, if not with a number of machines on hand, with a costly outfit that would be of little or no use in any other line of business.

This is an age of speed in all matters. One hundred years ago it took a letter five weeks to go from Texas to New York; it took a passenger from five weeks to two months to cross the Atlantic, and the trip from New York to Chicago would have occupied the time of a regiment of soldiers for weeks. Now the letter goes to New York in three days; the telegraph gets its answer in a few minutes; the ocean greyhounds plough the Atlantic in less than five days, while "hurry orders" will put an army now in New York into Chicago in forty-eight hours.

These advances in public utilities demand an equal advance in private transportation. The trolley has carried many "back to nature," but the trolley follows only a beaten path, and its touch of nature is only measureably well done. All along the clanging rail there is the hand of the iconoclast, which puts on all things the mark of "man-made."

The motor car! Handmaiden of nature's healing touch, purveyor of balmy air and "nature's inmost stillness;" the real twentieth century's aide-de-camp to making the country home a better and handier place for a busy man to live than in the city suburb, and which puts the "reub" and his family, now that he has a daily mail, telephone, waterworks, sewerage and all that sort of thing, right in the swim with his city-dwelling brother, so far as up-to-dateness is concerned, and "skins him a city block" so far as health, comfort and a chance to be a Christian goes.

The times demanded quick, tireless and economical transportation, personally controlled, the people demanded it, the auto was slowly and patiently worked out to meet the demand. The auto has been the dream of man for a century. "Coming events cast their shadows before," and minds that dreamed not of telephones, flying machines and Atlantic greyhounds were working out the problem. During the past fifteen years the race for the present auto perfection has been fierce; inventors poured out treasure and lavishly burned midnight oil, while a sea of eager humanity pressed on by the urgent demand of the age clamored for the commercially practical automobile.

The demand in quality is met. Speed has passed the limitations of present day road-making; more than 10,000 miles without a stop, through mud and sand, over stones and stocks, over hill, plain and mountain, have proven endurance, done not limpingly, but at railway speed. The cost has been met and the man with $400 can have his auto, while the man with a taste at $5,000 can find in stock cars that are worth every cent of the money.

Mr. Dealer, if you are worth the alfalfa it would take to keep you, line up, and begin to treat your customers right. Many of the vehicle manufacturers—some of the biggest and some of the middle-sized ones and some of the little ones—are making autos. They reason it out this way: If the auto does not affect the buggy and carriage trade, I have held my part of that trade and got an auto "pick-up;" if the auto splits the trade I am right in the middle of the split and can suit 'em coming and going; if the auto "eats 'em alive" and the buggy trade goes to pieces, I am already an auto dealer and can beat the fellow who has failed to get in on the ground floor.

A careful consensus of the opinion of the vehicle journals shows that now there is a tendency to a division or "split" in the trade, with a threat of the carriage trade getting the smaller end of the bargain at no distant day, so far as the finer trade as a matter of quantity is concerned.

CAB MONEY TELLS THE STORY.

No more striking change has taken place in any country than the new aspect of street life in London, which has come about in the last few months. Not only are the horse omnibuses disappearing, but that other distinctive institution, the hansom cab, is doomed.

More than 4,000 motor cabs have appeared in the streets of London within the past twelve or eighteen months, and their numbers are increasing at the rate of about 1,500 a year. No one will any longer take a hansom if a taxi is available and the owners and drivers of horse cabs are in utter despair. A hansom in good condition which cost $300 or $400 will fetch now only $15 at a sale. Somewhat worn vehicles are a drug in the market at half that sum.

Previous to two years ago cabmen paid the proprietors an average of $3.50 a day for the hire of a cab with one change of horses during the twelve hours. They were able to make average takings of about $5, leaying them about $1.50 profit. Now drivers refuse to pay $1.75 a day, for there is not a living in the job even at that figure. The cabbies ascribe the sudden slump in their industry as much to the great new system of underground tubes, where the number of passengers has nearly doubled.

The public almost unanimously take the underground railroad for distances above three miles, while for rides of a mile or a mile. There has been for years an agitation in London for able, but actually cheaper than a hansom. The minimum fare by a horse cab is twenty-five cents; the fare for a mile by taxi is sixteen cents, with an addition of four cents for each quarter of a mile above that unit.

So it happened this week that the cab owners and cab drivers.

Digitized by Google

as a last desperate effort against extinction, have petitioned the Home Secretary to make the use of taximeters compulsory on all horse cabs, with a minimum fare of twelve cents for the first mile. There has been for years a nagitation in London for horse taxicabs—not so much in order to secure a lower minimum fare, but to do away with the almost inevitable dispute with the cabman when his passenger tendered him the exact legal fare.

The cabmen have always fought against the innovation, pleading that they could not make a living if they received only what was legally due them. Now they are pleading for the very regulation which they have opposed and scorned. If they get it it may postpone a little the evil day for them, but this is all, says Motor Print. Nothing is more certain in the way of future London life than the complete disappearance of the horse-drawn cab.

One effect of the rapid change, not only in London but in all English cities, is a large exportation of horses to the Continent. An average of 500 weekly are being sent abroad, and there is good reason for believing that the best of them find their destination in Continental cavalry forces. The British War Office has expressed considerable anxiety of late over the lack of military horseflesh in England, but it is making no effort to check this exodus. It is intended to take a horse census in Great Britain and Ireland this summer in order that the military authorities may know definitely what are the emergency resources of the country in this respect.

CHANGES ALL ALONG THE LINE.

With the completion of arrangements for the sale of the whole of the product of this season, a number of the largest manufacturers are announcing the details of their models for the season which will follow. Many others who have not gone to this length have given out an idea of the principal features of the cars to which they will devote their energies, and of a third class, rumor only has spoken as to the product.

Thus it is that plans are made public, and among these plans are many which will interest the people; some for the folks able to buy luxurious cars, on which the improvements take the form of added luxuries, others (and these will be most numerous) will appeal to the great class of people who up to date have been nothing but "wishers" because of the prevailing prices.

It is to the latter class, says Automobile, only able to pay a very small prices as prices go, but numerous in the extreme, that a few manufacturers will cater for the first time. These cars will be the very personification of simplicity, both as to number of parts and their functions, resulting in a simple and easily mastered control system. Many, if rumor is trustworthy, will be equipped with two-cycle engines, several of the differential piston type. But this seems like a case of saving at the bung-hole to waste at the spigot, for the fuel consumption of this type of motive power is notoriously high. Of what avail is a poor man's automobile at $1,000, if the fuel and up-keep cost is equal to that of a $4,000 machine?

Actually the increased up-keep cost would be a greater hardship than the greater initial expense, for the latter comes but once, while the former partakes of the nature of a continuous performance, which must go on as long as the machine is employed, and is only terminated when it is disposed of and the pleasure of use ceases.

One prominent development will be the absence of freaks in the class known as "best sellers," most of which will continue the present types without change. In this category come the six-cylinder motors for high powers, all of which will doubtless be continued as at present.

In the list of mechanical features worthy of mention, it is noticeable that the fuel question is being given increasing thought, and the 1910 cars will include many which are fitted for the use of a fuel other than gasoline, and still more arranged for fuel injection. An observed trend is in the ignition, single ignition with a magneto as a source of current being on the gain at the expense of other forms. Many of the very low priced cars will doubtless turn to the two-speed transmission, while there will still be many who adhere to the planetary type, with its inherently simple control.

Equally as conspicuous as the newer features or the changes in the product of the high class producers will be, the new faces in the industry, these being recruited chiefly from the implement, agricultural and buggy manufacturers of the Middle Western States.

All told, the season of 1910 will make many remarkable changes in the industry as a whole, and much will be added to automobile history.

CLARKSON SUCCEEDS CHALFANT IN A. L. A. M.

Coker F. Clarkson has been elected assistant general manager by the board of managers of the Association of Licensed Automobile Manufacturers to fill out the term of E. P. Chalfant, who recently resigned as general manager to become identified with the Packard Motor Car Company. Mr. Clarkson has been connected with the association for some time in the mechanical and publicity departments and has been in close touch with its affairs.

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, five cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

HELP WANTED.

Wanted—300 mechanics. Wood and metal workers, painters, trimmers. Large automobile body factory. Must fill buildings just completed. Write Racine Manufacturing Co., Racine, Wis.

Wanted—At once, all around painter for factory handling farm wagons, buggies and surries. Must be a good striper and No. 1 finisher. Steady work to a good man. State age, past experience and wages wanted, in first letter. Miller Wagon Co., Edina, Mo.

Wanted—A competent superintendent for carriage factory in a New England city. Must be good draughtsman and understand automobile body building in wood and metal. Address with full particulars in confidence to L. H. Kronfeld, P. O. Box 153 Mount Vernon, N. Y.

Wanted—A progressive, industrious, young or middle aged man, experienced in building light high grade vehicles, to take charge of factory. Must be a man of advanced ideas and good designer, systematic, good organizer, one that can produce high grade work at lowest cost. Great opportunity for the right man. Address "E. M. H.," care The Hub, 24 Murray street, New York, N. Y.

SITUATIONS WANTED.

Wanted—Position by first-class painter with twenty years' experience in all lines of carriage and wagon painting. Can handle old and new work. Is a high grade all-around mechanic. Executive ability first class. Reference furnished. Address "Foreman," care The Hub, 24 Murray street, New York City.

Wanted—Position as superintendent in large carriage factory, as my experience in the past has been as such. Have been superintendent for a number of years, and am a practical man. Am a hustler and an organizer of men, and can get out work at a low cost. Address "W. W.," care The Hub, 24 Murray street, New York City.

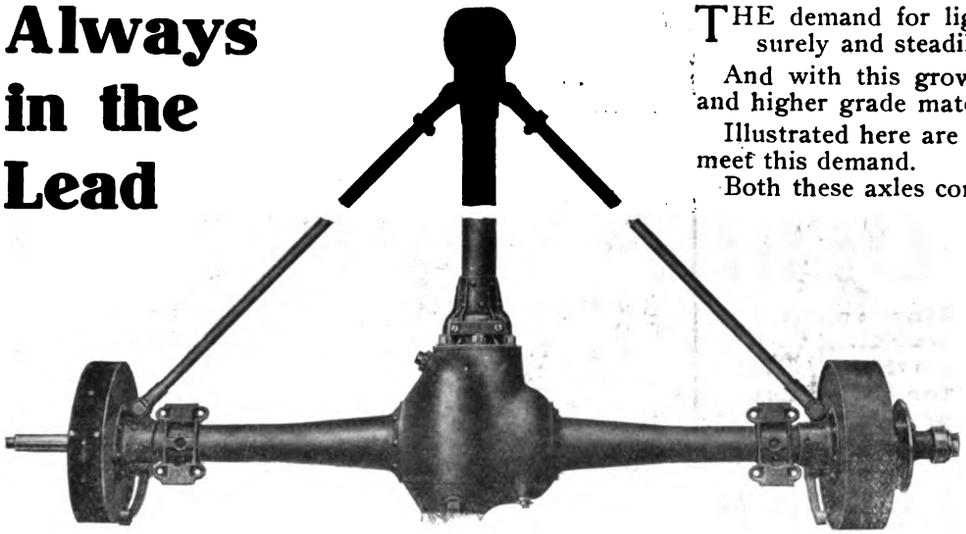
Wanted—Position as superintendent. Twenty years experience in number of factories as mechanic foreman, superintendent and factory manager. Am in the race for producing and economy. Strictly sober and with good reference. Address "Superintendent," care The Hub, 24 Murray street, New York City.

PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 608 F street, Washington, D. C. Established 1883. I make an investigation and report if a patent can be secured and the exact cost. Send for full information. Trade-marks registered.

Digitized by Google

Always in the Lead



No. 500.—Timken Rear Axle, Top View.

No. 100.—I Beam Timken Front Axle.

THE demand for light substantial cars is growing surely and steadily.

And with this growth comes a demand for better and higher grade materials.

Illustrated here are two axles, specially designed to meet this demand.

Both these axles combine

TIMKEN

PRINCIPLE AND QUALITY

which in itself is a guarantee for durability and simplicity.

If you are now building Motor Buggies or Light Cars, or are contemplating building them, we would be glad to correspond with you and give you good reasons why you should use

TIMKEN PRODUCTS

Write us for facts.

THE TIMKEN ROLLER BEARING AXLE COMPANY, Canton, Ohio

Branches
10 E. 31st Street, New York
429 Wabash Avenue, Chicago, Ill.

The Fairfield Rubber Co.

Manufacturers of Carriage Cloth, Imitation Leather, etc. For Automobiles and Carriages

Fairfield - - - Connecticut

ESTABLISHED 1886.

Correspondence School of Carriage and Motor Carriage Drafting

A thorough, practical tuition is given through this correspondence school. The theory and practice of construction, bookkeeping, perspective. Many men now hold good positions through taking the courses of instruction.

Principal, THOS. MATTISON,
Hillside Avenue, Bitterne Park,
Southampton, England.

Author of "The Coach Body Makers' Guide," $3.00; a practical treatise on "The Suspension of Carriages," "Bookkeeping," and other carriage building works.

The most power to the weight car of any of this type now on the market.

SIMPLE, DURABLE AND RELIABLE

Four years of success. Write for catalog and prices

THE BUGGYCAR CO.

ARMORY AND JOHN STREETS

CINCINNATI :: :: :: :: OHIO

Digitized by Google

A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 20 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street ROCKFORD, ILL.

H. K. PORTER
EVERETT, MASS., U.S.A.
BOLT CLIPPERS

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

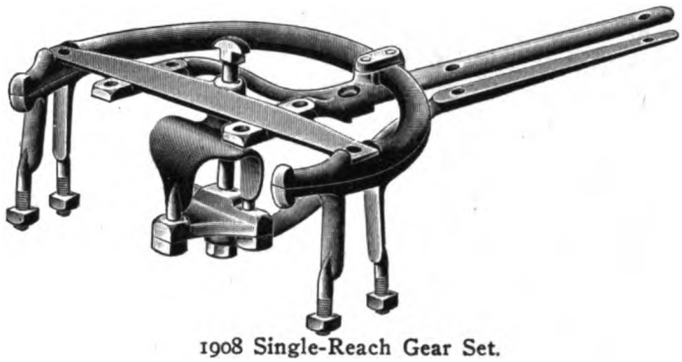
Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.
745 THIRD AVE., BROOKLYN, N. Y.

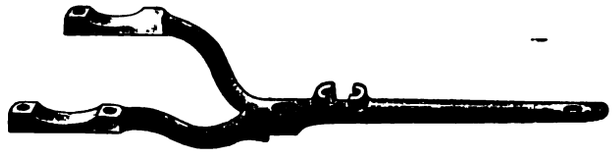
INDEX TO ADVERTISEMENTS.

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.



Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.

PATENTED DEC. 8, 1901

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland. Pa.

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Please mention "The Hub" when you write.

Digitized by Google

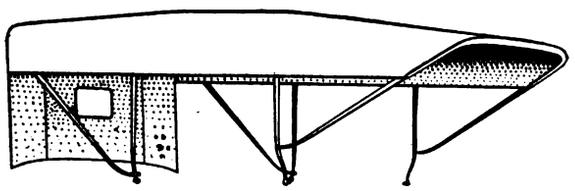
TOPS and Upholstering

FOR

AUTOMOBILES

AND

HORSE VEHICLES



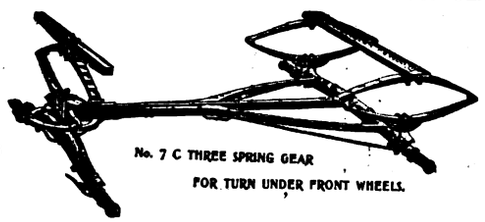
MANUFACTURED BY

Ball Buggy Top Co.

YORK, PENNSYLVANIA

THE OLD RELIABLE AND ONLY SCHUBERT BROS. GEAR CO.

50 Other Styles

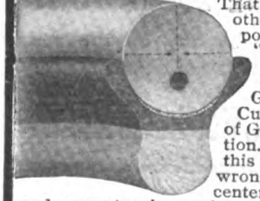


No. 7 C THREE SPRING GEAR
FOR TURN UNDER FRONT WHEELS.

Always address us this way if you wish any of our specialties. Work-in-the-White Bodies, Seats and Gears for Carriages and Automobiles. Special work in bodies promptly attended to. Let us figure with you. **Would you like our Catalogue?**

SCHUBERT BROS. GEAR CO., Oneida, N. Y.

This Cushion Tire is Made of *New* Rubber!



That's one reason it wears so much longer than others. The rubber we use is quoted at $1.30 per pound today. We *could* make tires of old rubber "reclaimed" from the junk pile, that costs 10c a pound, or "Lapori" and "Guayule," that cost 35c a pound, but that kind won't do for a Goodyear. This is the Eccentric Cavity Cushion Tire with canvas guides—a special point of Goodyear construction. You can't get this Goodyear Tire on wrong. The hole-below-center takes the wire outside the zone of motion and prevents wire cutting. Every user can *see* the advantage of the Goodyear at once.

GOODYEAR

Write for booklet on Cushion Tires, explaining construction in detail. Ask for sample section of tire. Do it today. A postal will do.

The Goodyear Tire & Rubber Co.

Canal St., Akron, Ohio

Boston Cincinnati Los Angeles Denver Chicago Philadelphia New York
San Francisco Indianapolis Cleveland Milwaukee St. Louis St. Joseph
Buffalo Detroit Pittsburg Omaha Washington Atlanta
Louisville New Orleans Memphis Dallas Baltimore Kansas City

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.
Dalzell Axle Co., South Egremont, Mass.
Timken Roller Bearing Axle Co., Canton, Ohio.

Bodies, Seats, Etc.
Woodman, Joel H., Hoboken, New Jersy.

Bodies in the Whits.
Miller Bros., Amesbury, Mass.
Schubert Bros. Gear Co., Oneida, N. Y.

Bolts and Nuts.
Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.
Wiese & Co., Wm., New York City.

Carriage Forgings.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.
Gifford & Son, John A., New York.

Carriage Goods.
English & Mersick Co., New Haven, Conn.
Fairfield Rubber Co., Fairfield, Conn.
Gifford & Son, John A., New York.

Dashes, Fenders, Rails, Etc.
McKinnon Dash Co., Buffalo, N. Y.

Fifth Wheels.
American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Finished Vehicles.
Studebaker Bros. Mfg. Co., South Bend, Ind.

Hubs.
American Wood Block Co., The, Delphos, Ohio.
Koller & Co., J. B., Mechanicsburg, Pa.

Jacks.
Hankinson, J. V., Franklin, O.

Lamps.
Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Machinery and Tools.
Barnes Co., W. F. & John, Rockford, Ill.
Bentel & Margedant Co., Hamilton, Ohio.
Porter, H. K., Everett, Mass.
West Tire Setter Co., Rochester, N. Y.

Miscellaneous.
Standard Oil Cloth Co., New York.

Ornaments.
Palm, Fechteler & Co., New York, N. Y.

Rubber Tires.
Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Kokomo Rubber Co., Kokomo, Ind.
Stein Double Cushion Tire Co., Akron, O.

Shaft Couplings and Anti-Rattlers.
Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Metal Stamping Co., New York City.

Springs and Gears.
Fitch Gear Co., Rome, N. Y.
Indianapolis Bolster Spring Co., Indianapolis, Ind.
National Spring and Wire Co., Albion, Mich.
Schubert Bros. Gear Co., Oneida, N. Y.
Spring Perch Co., Bridgeport, Conn.

Spokes.
Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.
Koller & Co., J. B., Mechanicsburg, Pa.

Trimming Materials.
Stevens & Sackett Co., New Haven, Conn.

Varnishes, Paints and Japans.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Masury & Son, John W., New York and Chicago.
Pierce Co., F. O., N. Y. City.
Smith & Co., Edw., N. Y. City.
Standard Varnish Works, New York City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

White Lead.
Eagle White Lead Co., Cincinnati, Ohio.

Wheels.
Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.

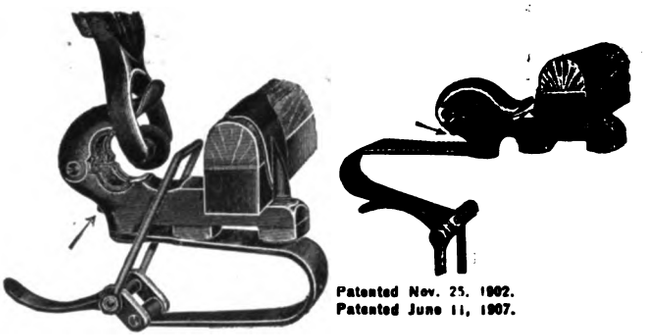
Wheel Stock, Bent Wood, Etc.
Crane & MacMahon, New York.
Koller & Co., J. B., Mechanicsburg, Pa.
Tucker Wood Work Co., Sidney, Ohio.

Digitized by Google

Eccles Ball Bearing Couplings

ALL OUR COUPLINGS ARE SHIPPED OUT WITH TWO PIECE BUSHINGS, FASTENED IN THE COUPLINGS

WHEN BUSHINGS ARE WORN OUT BY LONG USE, THEY CAN BE INSTANTLY REPLACED AND FASTENED INTO THE SOCKET BY OUR SPECIAL PROCESS



Patented Nov. 25, 1902.
Patented June 11, 1907.

THE SPRING IS PIVOTED AT THE FRONT SO THAT IT CAN BE TURNED OUT OF THE WAY OF THE WRENCH WHILE CLIPPING COUPLING TO THE AXLE.

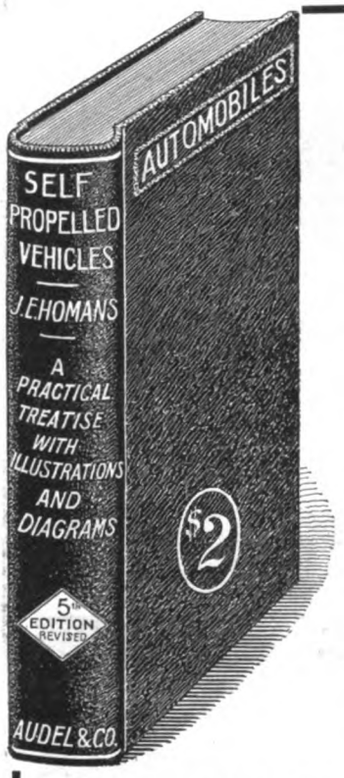
No Lost Bushings when you Use Our Couplings

We Make a Full Line of Carriage and Wagon Forgings

RICHARD ECCLES COMPANY

Catalogue No. 15 is our latest

AUBURN, NEW YORK.



"Self-Propelled Vehicles"

Fifth Edition, Revised.

A practical treatise on the theory, construction, operation, care and management of all kinds of Automobiles.

By

JAMES E. HOMANS, A.M.

Contains 608 pages and upwards of 500 illustrations and diagrams, giving the essential details of construction and many important points on the successful operation of the various types of motor carriages driven by steam, gasoline and electricity.

This work is now the accepted standard, explaining the principles of construction and operation in a clear and helpful way. This book will be sent postpaid to any address in the United States, Mexico or Canada upon receipt of $2.00.

Address

TRADE NEWS PUBLISHING COMPANY

24 Murray Street, New York

J. B. Koller & Company

Manufacturers of all kinds and sizes of

Finished Spokes and Bent Rims

Also all kinds of

SLEIGH, SLED AND BOB SLED RUNNERS

MECHANICSBURG, PA.

MILLER BROTHERS

Builders of

CARRIAGES

IN THE WHITE

AND

Automobile Bodies

AMESBURY, MASS.

Digitized by Google

PLATE 5.
Low Wheel Runabout.

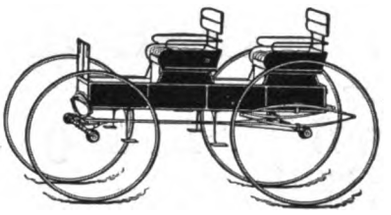


PLATE 10.
4 Pass. Beverly Wagon.

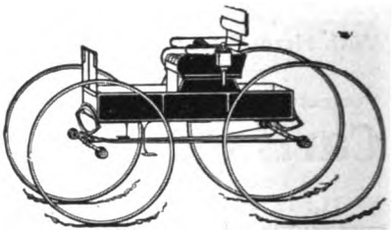


PLATE 15.
2 Pass. Beverly Wagon.

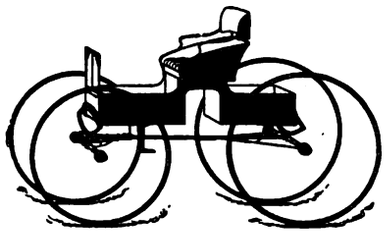


PLATE 20.
Cut-under Buggy.

MAKE YOUR
ADVERTISEMENT
ATTRACTIVE

By using these Advertising Cuts

at 75 cts. each.

The plates shown on this page are especially made for newspaper advertising, but, because of their clearness, are as well suited for the best printed magazines and stationery.
They are

Unique in Style
Correct in Detail
Attractive in Appearance

and represent the most popular carriages of to-day.

A special plate, the size and character of those on this page, of your own design and for your exclusive use, will be furnished for $3.00.

One or more sent at 75 cts. each, by mail (postage prepaid) on receipt of check or money order.

TRADE NEWS PUBLISHING CO.,
24-26 MURRAY ST.,
NEW YORK.

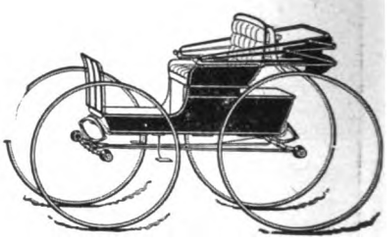


PLATE 25.
Corning Buggy.

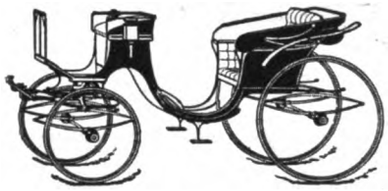


PLATE 30.
Panel-boot Victoria.

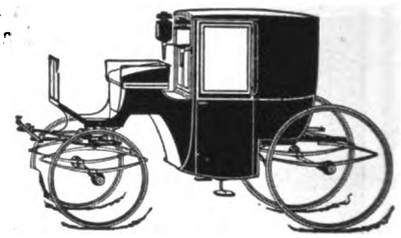


PLATE 35.
Brougham.

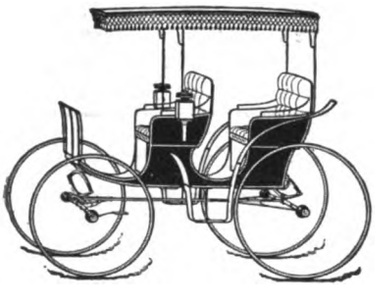


PLATE 40.
Canopy-top Surrey.

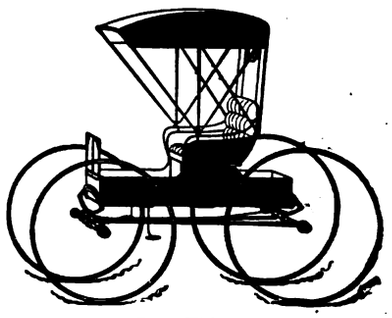


PLATE 45.
Elliptic Spring Buggy.

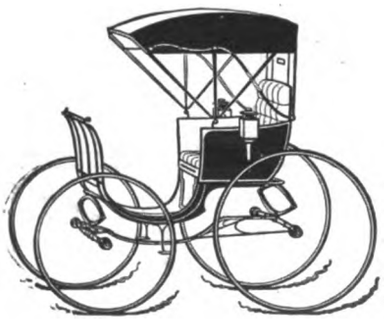


PLATE 50.
Ladies' Phaeton.

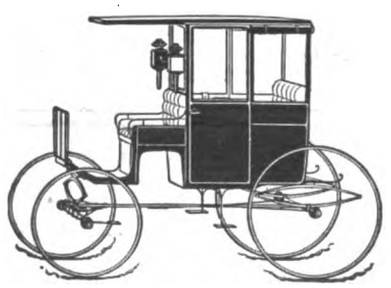


PLATE 55.
Station Wagon.

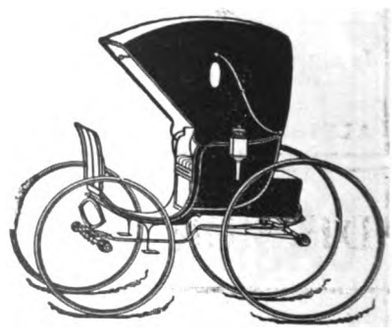


PLATE 60.
Doctor's Phaeton.

Digitized by Google

THE BRADLEY SHAFT COUPLING

OPEN

Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME!

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

C. C. BRADLEY & SON, Syracuse, N. Y.

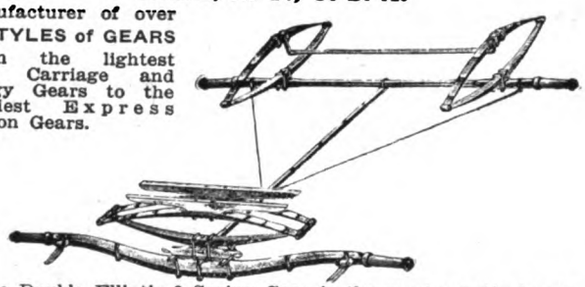
CLOSED

FITCH GEAR COMPANY

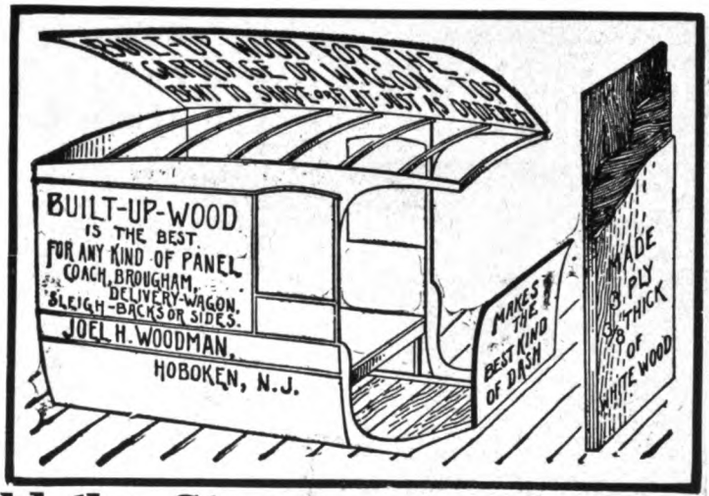
ROME, N. Y., U. S. A.

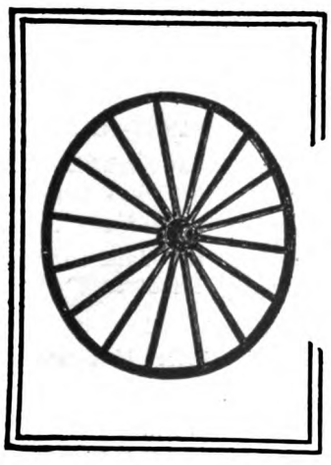
Manufacturer of over 40 STYLES of GEARS

From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.



The Double Elliptic 3-Spring Gear is the most practical combination business and pleasure gear on the market, and is equipped with Wrought or our Common Sense Short Turn Fifth Wheel. Send for our No. 24 Catalogue.





Time Has Told the Story!

Service and satisfaction always follow our rolling stock

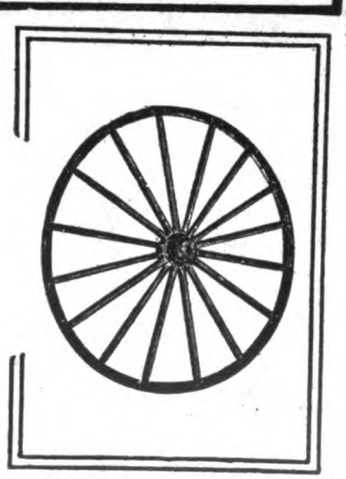
WHEELS

ALL KINDS—BEST QUALITY

Also RIMS and SPOKES

The Eberly & Orris Mfg. Co.

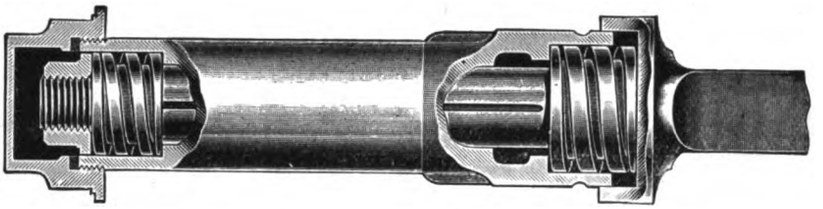
MECHANICSBURG, PA.



Please mention "The Hub" when you write.

Digitized by Google

PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

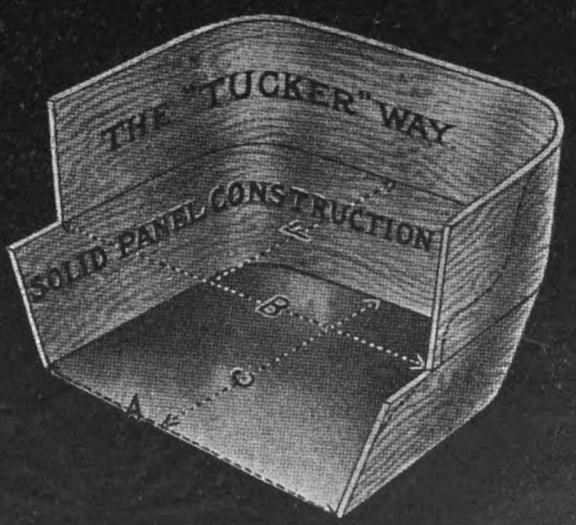
DALZELL AXLE CO., South Egremont, Mass.

BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

SOLID BENDINGS



MAKE FAULTLESS SEATS

CATALOG "H" SHOWS SIZES

WRITE FOR IT

THE TUCKER WOODWORK CO. SIDNEY, OHIO.

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway Station, 53d St. Elevated and all Surface Lines.

Headquarters for Saddlery and Harness Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIREPROOF

STRICTLY FIRST-CLASS

RATES REASONABLE

All Hardwood Floors and Oriental Rugs.

Ten Minutes Walk to Twenty Theatres.

Transient Rates, **$2.50** with Bath, and up.

Excellent Restaurant. Prices Moderate.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

Please mention "The Hub" when you write.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES } **C. T. RAYNOLDS & CO'S** { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES }

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

The American Wood Block Co., Delphos, O.

SECTIONAL VIEW.

Hub Blocks

Green—Air and Kiln Dried. Sold by grade or timber run. Compressed blocks or otherwise. 3 in. to 12 in. diameter. Stock kept up to standard quality and ready for shipment at all times.

GILLETTE'S

"IDEAL" HUB

It stands the Racket

The **IDEAL** hub makes the strongest wheel. Repairs are less than on any other style; actual use has proven these facts.

IDEAL is metal protected, wood to wood center, means elasticity; simplicity of construction, easily and quickly repaired, driven spokes best of all, no metal to corrode.

IDEAL has the patented inverted flange that prevents lateral strain.

IDEAL means less tire resetting.

Try it—it is guaranteed.

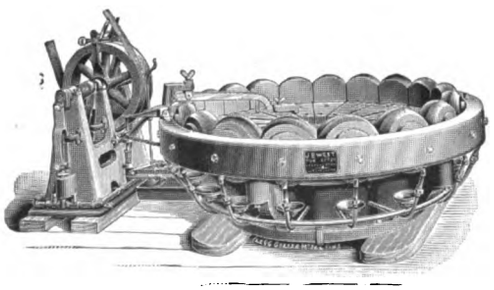
We want the wheel makers to use the **IDEAL** in their wheels.

The American Wood Block Co.

DELPHOS, OHIO

HUB BLOCKS **HUBS** **DIMENSION STOCK**

THE FIRST TIRE SETTER



you ever heard of was a **"WEST"**—probably, for they were on the market several years before any other and you are hearing more about them every year. Many of the older users are loudest in their praise. That's because they stand the test of time—they're made that way. Some of our Hydraulic machines have been **in use fourteen years** and are doing as good work now as when first installed. **Now**, we don't claim our machines are best simply because they have been longest on the market, **but because** we have been making a study of cold tire setting all these years and improving our machines as experience and observation taught us, and when you buy a **"West Hydraulic"** you get the benefit of this experience. Some people knowing **our** machines would set tires cold satisfactorily, thought some other would do as well—and the price was cheap—also machine. Now they wish they had bought a **"West Hydraulic."** **If you make a similar mistake it's your own fault.**

Buy a **"West Hydraulic"** and be happy. Hand or Power machines.

THE WEST TIRE SETTER COMPANY, Rochester, N. Y.

Digitized by Google

No. 440B, with Rail.

WITH RAIL WELDED SOLID

McKINNON DASH COMPANY

CINCINNATI, O.
TROY, O.

BUFFALO, N. Y.

ST. CATHARINES
ONTARIO

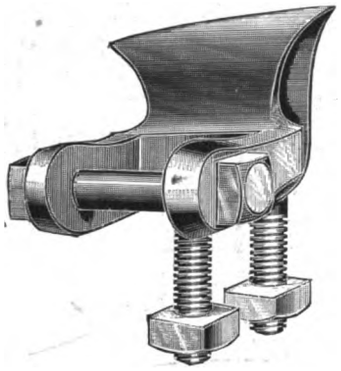
For a Moderate Priced Vehicle.

OUR No 440B WITH RAIL

BRASS PLATED.

WILL OUTSELL ANY WORK WITH AN

OUT OF DATE PLAIN DASH



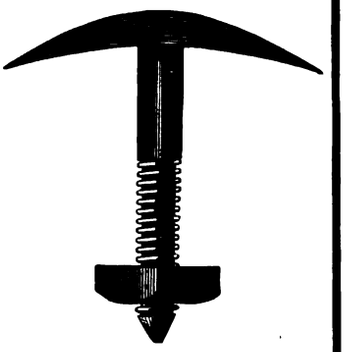
Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips 5/8 or 3/4 width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

Catalogue "H" and Prices on Application.

COLUMBUS BOLT WORKS, Columbus, O.



Kokomo Solid Rubber Tires

¶ In rubber substance the Kokomo Solid Rubber Vehicle Tire is truly **SOLID.**

¶ Solid with the pure stock that has made them an exception to the ordinary tires of commerce.

¶ In Kokomo quality there is an established standard that is recognized as the highest ideal of tire construction. The Kokomo is a standard tire in every respect.

¶ Kokomo Tires always score in the running, and the longer the test the more convincing the results.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google

The Hub

GET BUSY.

With the final curtain drawn on the tariff tinkers and the bill signed, sealed and delivered, the whole world commercial has occasion to rejoice. Lament not the fact that this, that or the other thing was not drawn according to individual views, but be satisfied with the stimulating effect the conclusion of this important bill will have upon business generally. Our great industrial system now knows where it stands, and can proceed with confidence. Confidence at this moment is all that is necessary to a restoration of prosperous conditions.

Oldest Carriage Journal in the World

1858 1909

Vol. LI. No. 5 AUGUST, 1909

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

C. A. WILLEY COMPANY

Color Grinders

AND MANUFACTURERS OF

SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.

WILLEY'S SUPERFINE SPECIALTIES COLORS C COACH & CAR TRADE MARK.

92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.

CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

ESTABLISHED IN 1791

Wm. Harland & Son

Beg to announce that they have removed their United States Headquarters to Genesee Street and Erie Canal, Buffalo, N. Y.

Wm. Harland & Son

IMPORTERS OF

Harland's English Varnishes

FOR

Coach and Automobile Builders, Railway and Street Car Finishing

AND MANUFACTURERS OF

High Grade Varnishes for all Purposes

FACTORIES:

MERTON, LONDON, S. W., ENGLAND.

GENESEE STREET and ERIE CANAL, BUFFALO, N. Y.

400 EASTERN AVENUE, TORONTO, ONTARIO.

Western Branch, 40 Dearborn Street, Chicago. C. H. Schooley, Manager.

General Manager United States and Canada, H. Hagger.

Digitized by Google

JOHN W. MASURY & SON

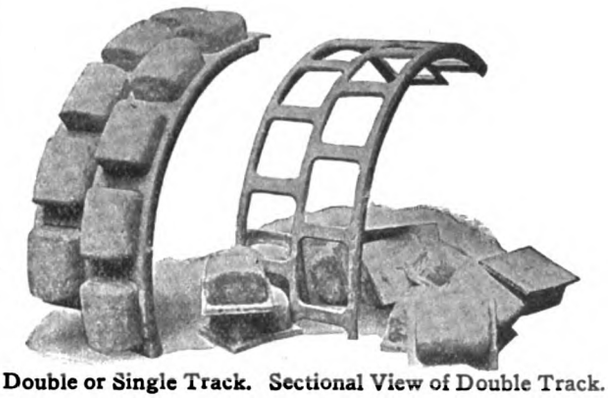
MANUFACTURERS OF

Superfine Coach Colors and Varnishes

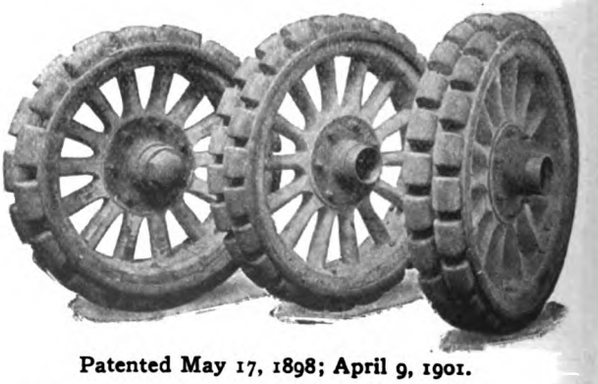
NEW YORK——AND——CHICAGO

SOLVED! Is the way the motor car experts express themselves on the subject of tires for commercial motor vehicles after seeing and using the :: :: :: :: :: ::

KELLY-SPRINGFIELD SECTIONAL TIRE



Double or Single Track. Sectional View of Double Track.



Patented May 17, 1898; April 9, 1901.

With a grip on the road that means progress and security from the fault of solid tires—that of crowding the rubber ahead under load, which means disintegration—the motor wagon and truck owner will find in the Kelly-Springfield Sectional Tires the best tire for all heavy cars. Each section is dependent upon itself. If interested, write :: :: :: ::

CONSOLIDATED RUBBER TIRE COMPANY

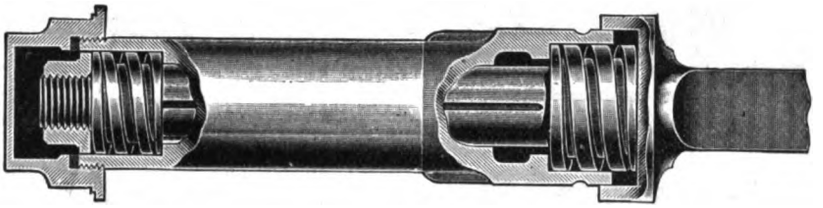
NEW YORK, N. Y.—and—AKRON, OHIO

Branches:

BOSTON CHICAGO PHILADELPHIA ST. LOUIS DETROIT CINCINNATI SAN FRANCISCO

Digitized by Google

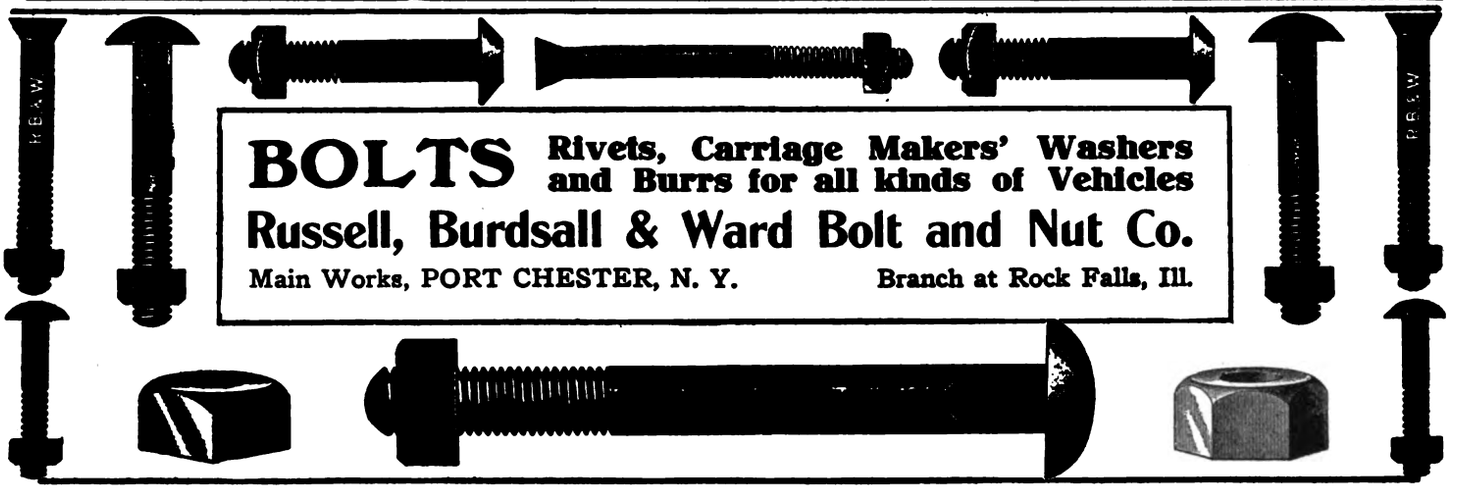
PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

DALZELL AXLE CO., South Egremont, Mass.

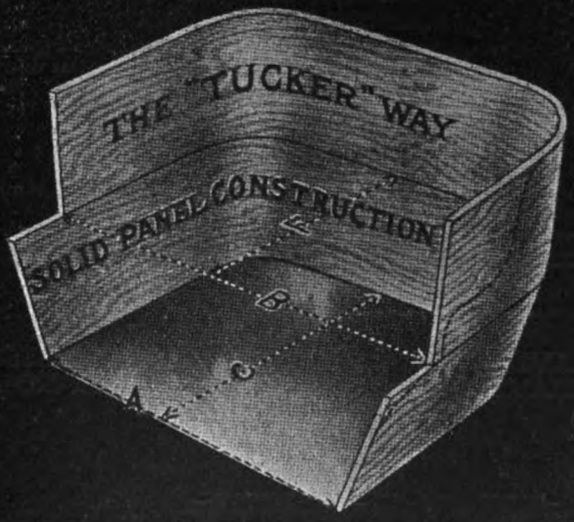


BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

SOLID BENDINGS



MAKE FAULTLESS SEATS

CATALOG "H" SHOWS SIZES

WRITE FOR IT

THE TUCKER WOODWORK CO. SIDNEY, OHIO.

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway Station, 53d St. Elevated and all Surface Lines.

Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIREPROOF

STRICTLY FIRST-CLASS

RATES REASONABLE

All Hardwood Floors and Oriental Rugs.

Ten Minutes Walk to Twenty Theatres.

Transient Rates, **$2.50** with Bath, and up.

Excellent Restaurant. Prices Moderate.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

Digitized by Google

Valentine's

Vanadium Varnish has been specially developed for its adaptability to the exacting needs of automobile painting and finishing. . . . .

VALENTINE & COMPANY,

Vanadium

Varnish is full-bodied, free-working and perfect-flowing, rapid and hard-drying, resisting action of the elements, mud and grease. . . . .

NEW YORK, CHICAGO, BOSTON, TORONTO, LONDON, AMSTERDAM, PARIS.

Varnishes

That are unexcelled in brilliancy and durability. They wear bright. Pale Vandium is the palest high-grade varnish made. . . . . .

Over 80 per cent of all exhibitors at the automobile shows of the last four years finished with VALENTINE'S VARNISHES

82 Years' Experience in Every Can

E.S. 1827 &CO. **Edward Smith & Co.**

CARRIAGE VARNISHES

Everything from the
Bare Wood to the Finishing Coat.

CHICAGO **NEW YORK**

HOTEL EARLINGTON

55 WEST 27TH STREET
Near Broadway, NEW YORK

This well known, absolutely fireproof hotel, after being entirely renovated, redecorated and fitted up complete with new plumbing has now reopened.

Rates from $1.00 and Up
With Bath, $5.00 and Up

Special rates by the season or year for permanent guests.
A special feature will be the cuisine, both in the dining room and in the new cafe for ladies and gentlemen. A la Carte and Table d'Hote.
Hotel under the management of

GUERNSEY E. WEBB
Formerly of the Ansonia.

RUB ——— RUB ——— RUB

THAT'S THE EXPERIENCE SOME PAINTERS HAVE WITH A POOR RUBBING VARNISH. THEY RUB TILL THEIR HEART ACHES ONLY TO HAVE THE VARNISH SWEAT, OR ROLL UP UNDER THE PAD.

XX Diamond Rubbing and Hard and Quick Drying Rubbing "A"

DRY HARD TO RUB IN TWO DAYS, WITHOUT SWEATING, ARE TOUGH AND THE BEST FOUNDATION FOR FINISHING COATS.

MADE BY **MOLLER & SCHUMANN CO.**

MARCY AND FLUSHING AVES., **BROOKLYN, N. Y.**

Digitized by Google

For the Limousine

Our line of Hardware Trimmings and Fittings is very complete. The "Season" is much earlier than last year and we suggest that your orders be placed at an early date. We can serve you better now than later, when the rush comes.
Broad Cloths, Bedfords, Laces, Trimmings, Megaphones, Toilet Cases and the 101 small details necessary for the well-finished job.

The English & Mersick Co.
New Haven, Conn.

DECALCOMANIE

Tranfers for all Purposes

Scrolls, Figures, Flowers, Letters, Animals, Stripings, Numerals, Corners, etc.

Special Name Plates of all descriptions. Buggy Ornaments in sets.

Beautiful Scroll Effects for ceiling work in Limousine bodies; also a large and attractive line of **Plaid Designs** for panels in automobiles. Every live manufacturer should look up this proposition. Nothing is more effective in body embellishment. **Cane Work Transfers** are also a big specialty with us. Name your wants and let us talk with you. New catalogue will soon be ready and will be sent with cash orders of $1.00 or more. No paint shop is complete without our catalogue.

Palm, Fechteler & Co
67 Fifth Avenue, New York
Chicago St. Louis Montreal Toronto

FOR AN EASY RIDE

AROUND THE WORLD

THAT

Stein Double Cushion Tires

ARE KNOWN

"Around the World"

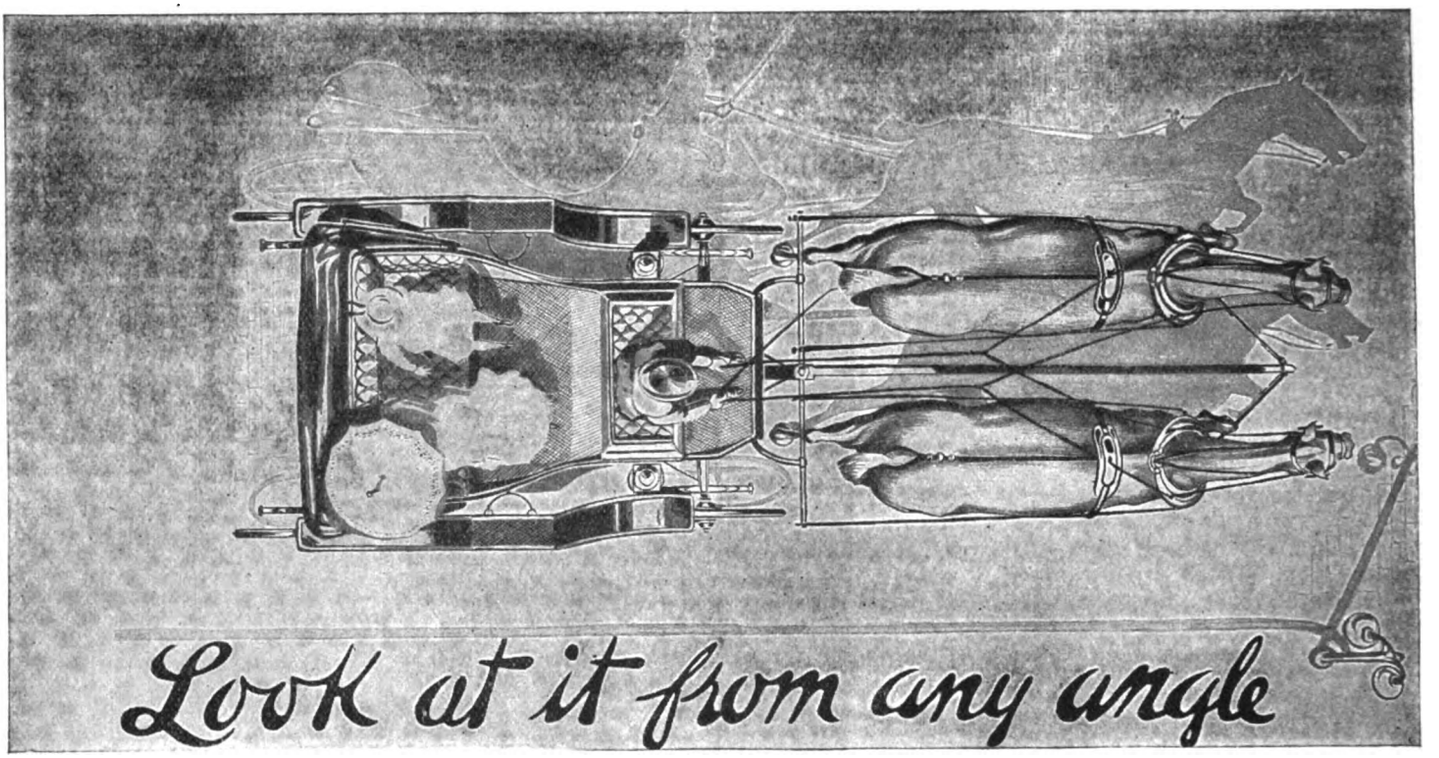
for that Quality, which embodies

Toughness, Strength, Durability and Resiliency

A combination that has made them famous.

STEIN DOUBLE CUSHION TIRE CO.
AKRON, OHIO

Digitized by Google



DEALER AND CONSUMER LOOK AT THEIR PURCHASE OF

GOODRICH SOLID RUBBER CARRIAGE TIRES

FROM THE

ANGLE OF REPUTATION

The B. F. Goodrich Company has been long established and conspicuously successful in the manufacture of reliable Solid Rubber Carriage Tires. This is reassuring to the Consumer.

And it has made its methods of business eminently considerate of the Dealer.

ANGLE OF SAFE INVESTMENT

Dealer and Consumer appreciate the significance of a thoroughly definite and reasonable guarantee of manufacturing processes and materials. Such a guarantee goes with every Goodrich Solid Rubber Carriage Tire.

ANGLE OF UTILITY

The Dealer will sell, and the Consumer will buy Goodrich Solid Rubber Carriage Tires; because the comfortable qualities—durability and resilience—are unquestioned. That is decisively determined by the Goodrich guarantee.

AN INTERESTING NEW CATALOGUE IS NOW READY.

THE B. F. GOODRICH COMPANY,

AKRON, OHIO.

Digitized by Google

The Hub

Copyright, 1909, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. LI. AUGUST, 1909. No. 5.

THE TRADE NEWS PUBLISHING CO. OF N. Y.

Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

REPRESENTATIVES:

J. Henry Klunk. J. G. Tanner.

Other Publications of Trade News Publishing Co.:

HARNESS (monthly) .....per year, $1.00

AMERICAN HARNESS AND SADDLERY DIRECTORY (annual) .....per copy, $4.00

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide du Carrossier*, 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

Exhibitors' Space.

The minimum of space at the C. B. N. A. exhibition of parts is 8 x 8 feet and costs $20, which, considering everything, is cheap enough. The arrangement to exclude non-exhibitors is only fair and right, and it is to be hoped there will be no occasion for aggressively putting the arrangement into effect. Possibly a compromise might be made in which non-exhibitors on the payment of a minimum fee could be accorded the privilege of the floor, but even this would not be in accordance with ethics. The exposition is not intended as a place to solicit orders or make sales. Its purpose is to exhibit—orders are incidental.

It would be no easy matter to guess what would be the condition of the C. B. N. A. to-day had not the exhibition feature been developed. The few carriage mechanics who stood a few of their accessories against the hallway in St. George's Hall on Arch Street, Philadelphia, on the occasion of the second meeting of the association in that city, little imagined they were laying the foundation of what would develop into a powerful and sustaining energy for the C. B. N. A.

Things to the Southward.

Trade conditions in the Gulf States, when compared with last year, are decidedly better, especially with reference to buggy sales, but there has been difficulty in cleaning out the warehouses and a cautious spirit characterizes shop activities. In the Southwest sales have been larger and settlements more prompt. The enterprising railroad managers have opened up opportunities for trainloads of homesteaders, and especially in portions of Texas, and in Arkansas new markets are in the making.

A heavy cotton crop is practically assured according to Southwest reports. In the Gulf States the industries are healthy and active. Coal mining, iron and steel making, sawmill work and the lesser industries engaged in the manipulation of lumber are doing a fairly thriving business. For two or three years past the South has had occasion to complain of dullness, especially in vehicle lines, but lately more agents of Northern factories from Cincinnati and many agents of Southern builders have scooped in an increase of business.

The Buckboard.

The original buckboard would never recognize its later descendants. Almost every feature of the early makes have been modified, not excepting the distinctive feature, the supporting board. The experience of those builders who have made the most out of the buckboard has led them to use springs and axles of the very highest quality. In fact, taken as a whole, the buckboard of to-day represents excellence of material and skill in workmanship.

For a long time they were confined largely to New England and portions of the Middle States, but of late years buckboards are found in considerable numbers far from the scenes of their original home. That the buckboard is destined to have a larger sale is the opinion of certain builders who have kept close watch on developments in the vehicle industry for the past few years. Its endurance, light repair expenses and ease with which it is cared for, make it a welcome possession among increasing numbers. Besides at present cost and selling prices there is more margin of profit.

Conditions Improving.

In reviewing trade conditions at the present time it would be impossible to make statements that would be true of the carriage industry at large. There is an underlying influence at work which affects the industry at large, but it is manifesting itself in spots and in degrees. Reports from the far Northwest, including the western provinces of Canada, indicate that dealers in vehicles have had a fairly good year in buggies and a prosperous half year in implements. Throughout the region known as the Central West the volume of business in light carriages has been moderate, while in wagons a more satisfactory business has been done. In New England and in portions of the Middle West builders of carriages are able to report a better business

Digitized by Google

in fine pleasure vehicles than during the same time last year, and at prices which admit of a wider margin. Wherever there is a buyer it is not so much a question of price. In certain lines of fine carriages there appears to have been a falling off in prices, but this is due to the unloading of stocks that have been carried some time by builders who are catering to a public who wants something new.

Faults of Glue.

With reference to the impurities of glue, referred to in our last issue, a good deal more can be said. Defective conditions which are claimed to be bad or inferior workmanship, are oftener the cause of dissatisfaction, as manufacturers know, than any other one cause. The best of wood often goes as wrong as defective wood, simply because the chemical nature of the glue was not understood. It is easy to say all glue is glue, but it isn't. Too little attention has been paid to maintaining the proper chemical relations of the constituents of glue. Behind viscosity lies the very important factor of power of penetration of the microscopic interstices of the wood. Some glues have the proper power of penetration; others have not.

Some glue manufacturers assert that glues must be taken as found, that chemical modifications do not and can not avail in the ordinary manufacturing processes. This may be so, but it need not be so. The steel chemist has made steel what it is to-day, and the glue chemist can do much to modify its characteristics in favor of greater permeability, which practically is another term for viscosity.

Memphis.

Memphis, Tenn., has become quite an important center for the manufacture of carriage material. Its geographical nearness to practically the largest sources of supply for vehicle construction gives it an importance and an advantage which promises to increase as transportation facilities improve. There are scattered all along the mountain ranges and the coves which are formed by the twists and turns of the mountains an unknown abundance of hard-wood material which has never received much attention because of its inaccessibility from a transportation point of view.

The editor speaks from personal knowledge. It is only within very few years that even the prospect of transportation facilities to these coves and mountain sides and ridges have appeared. As yet they touch only here and there, because there is not sufficient hard-wood lumber to make it worth while to look to it as freight, or enough of it to make lumbering in these localities worth special or exclusive effort. But there is a great deal of good lumber within reach of Memphis.

Steel-Hickory.

It may seem rather odd that hickory is found no where else on the globe than in the United States with streaks to the northward and southward. What the world now needs is a hickory-steel that will have the virtues of hickory and the endurance of steel. It is up to the delving metalurgists to supply it. The progress made in steel-making in the past quarter of a century is nothing short of marvellous, especially along the lines of vanadium steel and in hard-tool steels that have been so highly developed in England.

To assume that when the hickory supply is practically exhausted, which is not such a remote contingency, there will be no substitute, is to impugn the capabilities of intellect and skill. Most recent laboratory endeavors have been directed to procuring a steel of intense hardness. To produce a steel possessing other physical characteristics is neither visionary or chimerical. Metallurgical chemists have delved deeper into the arcana of nature than any other set of scientific investigators. They themselves declare they are only on the threshold of possibiilties and realities.

Steel comes nearer to hickory than any other known substance. Its progressive utilization in vehicles during the past generation is illustrative of its possibilities in the future. Were timber destroyed absolutely by a world-wide conflagration vehicles would still be built. Of course hickory is an ideal timber for lightness, endurance and beauty of finish, but the day will come, as all other days have come, when those who will follow us will smile at us. Hickory-steel is only in hiding. It is laughing at the metallurgists who could see it if they had on the right knowledge spectacles.

Auto Carriage Enterprise.

Each succeeding month the announcements of carriage builders entering into the alluring work of automobile construction, or the making of something which enters into this industry, are increasing. In this issue of The Hub a greater number than ever announce that they have entered this field. Carriage builders for years did not realize the advantages they possessed in this regard and, considering now what is possible and within their easy reach, they are rather cautious in branching out. The Studebaker, Durant and others have launched out to such an extent that their strictly carriage business is liable to be overshadowed by their automobile interests. They have leaped to the front and are able to teach the automobile builders how to build automobiles, and it goes without saying that they are able to teach them how to sell them.

Among the most conspicuous of those whose announcements are chronicled this month is that of D. M. Parry, who recently resigned from the presidency of the Parry Manufacturing Company to become the head of the Parry Auto Company, in which he hopes to make as great a success as he did in the carriage field.

EXPORT DUTY ON RUBBER FROM THE TERRITORY OF ACRE.

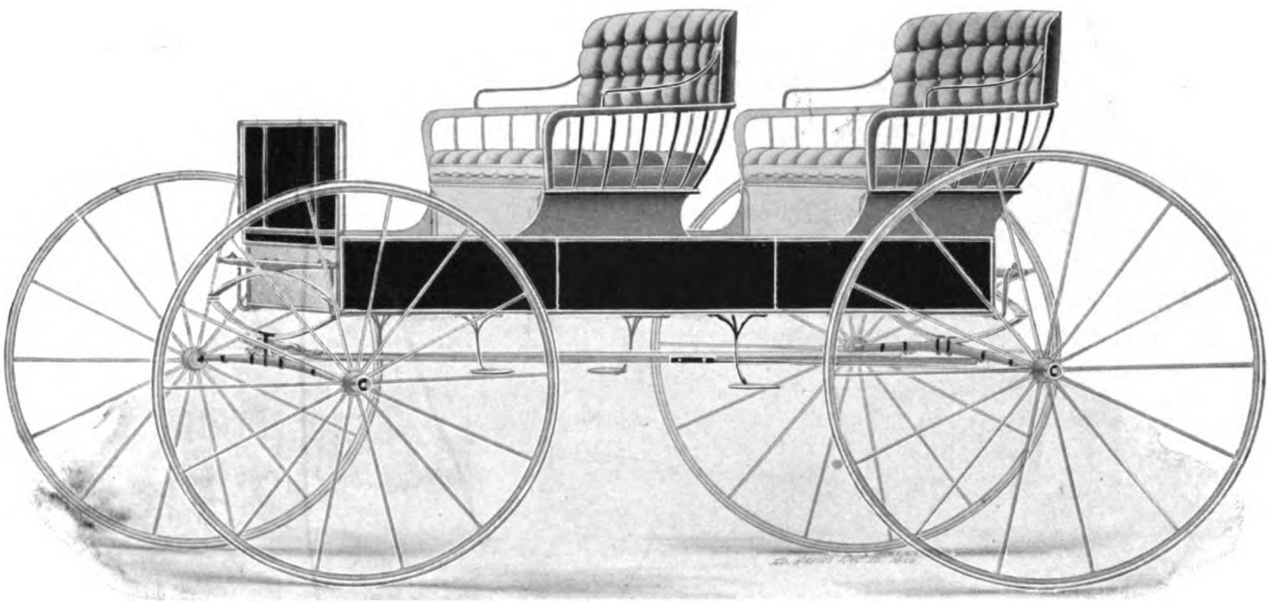
Mr. Henry L. Janes, American charge d'affaires at Rio de Janeiro, Brazil, reports under date of December 31, 1908, that the national budget law of Brazil for the year 1909 provides for a general duty of 20 per cent. on all rubber exported from the federal territory of Acre. According to article 2, Clause XIII., of this law, the president of the republic is authorized to grant a reduction of 6 per cent. in the amount of duty paid, according to a sliding scale whose maximum is 20 per cent. and whose minimum is 14 per cent. of the official valuation placed on the crude article, this privilege to go to syndicates of producers organized under the law of January 6, 1903.

PIERCE CO. TO MAKE SIX-CYLINDER CARS ONLY.

The Pierce-Arrow Motor Car Co., Buffalo, N. Y., who now have 1,000 of their six-cylinder cars in successful operation, have decided to devote the whole effort of their immense new factory to the manufacture of six-cylinder cars for 1910. The unqualified success of their six-cylinder cars and the indications that during the coming season there will be a large demand for this type of car has influenced them in making this decision.

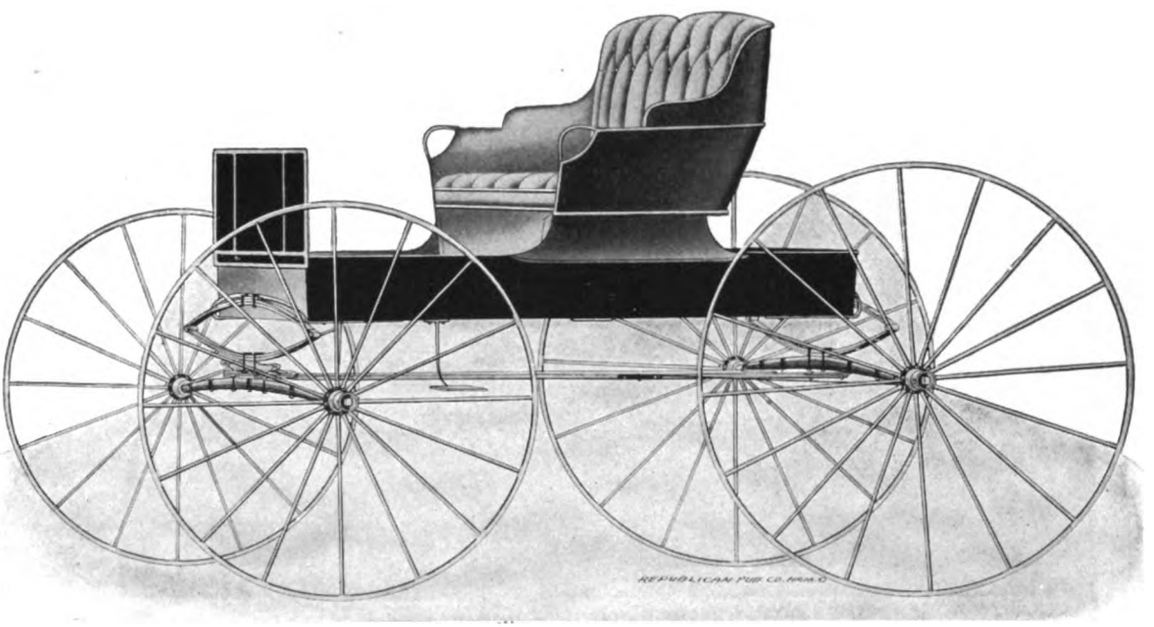
Digitized by Google

Illustrated Carriage Section, August, 1909.



DRIVING WAGON.

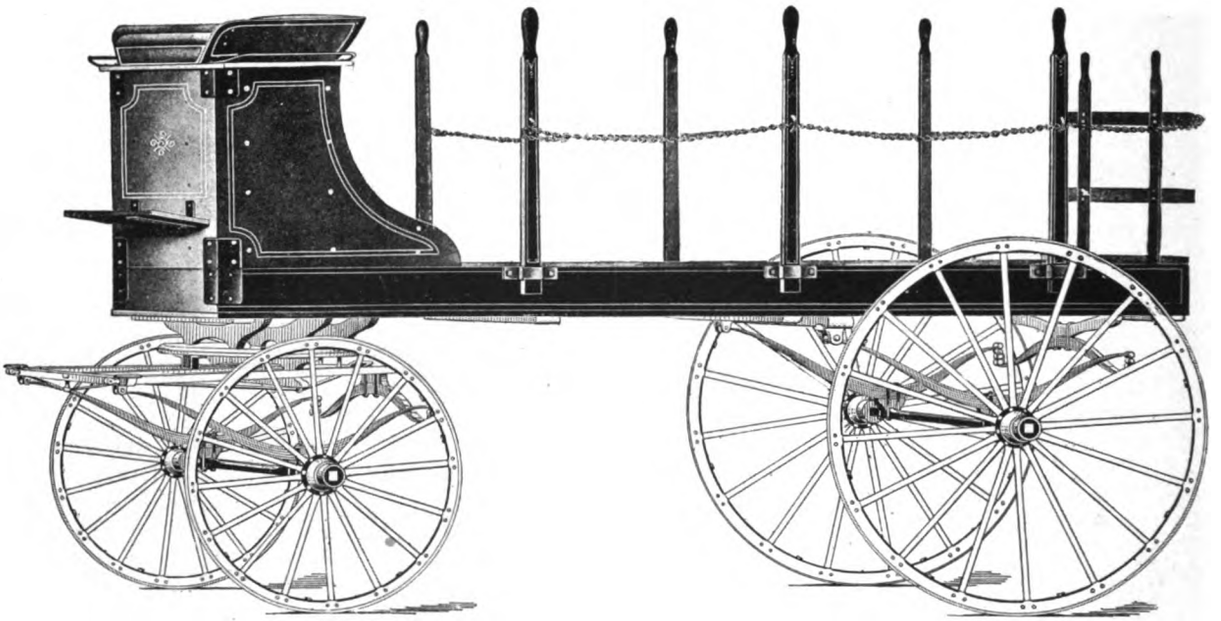
Built by the Moline Plow Co., Moline, Ill.



COUNTRY CLUB WAGON.

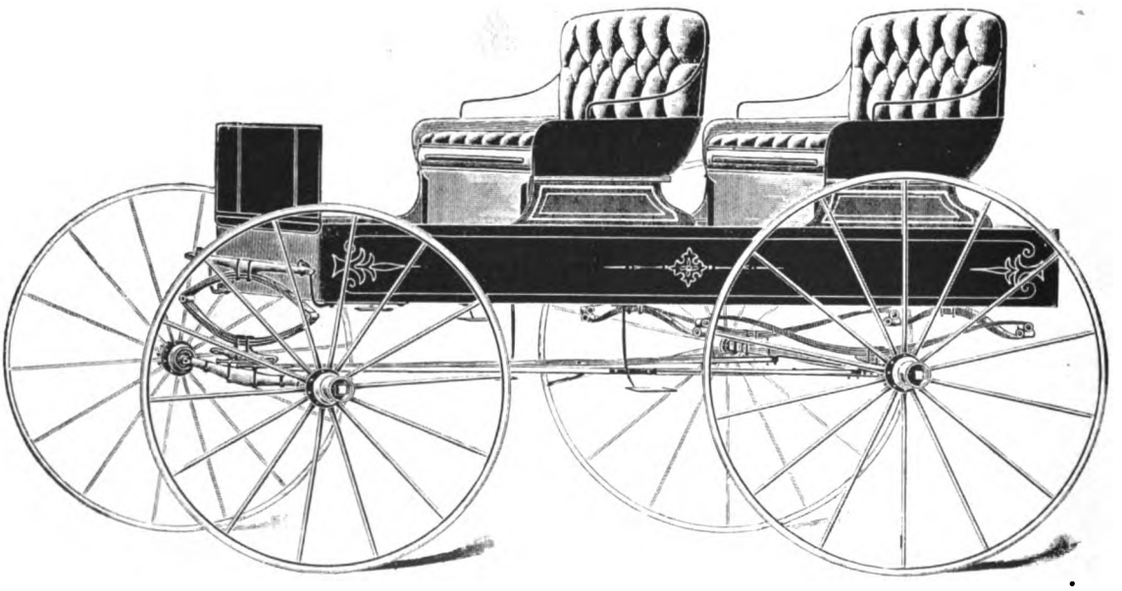
Built by The Gerstenslager Co., Wooster, Ohio.

Digitized by Google



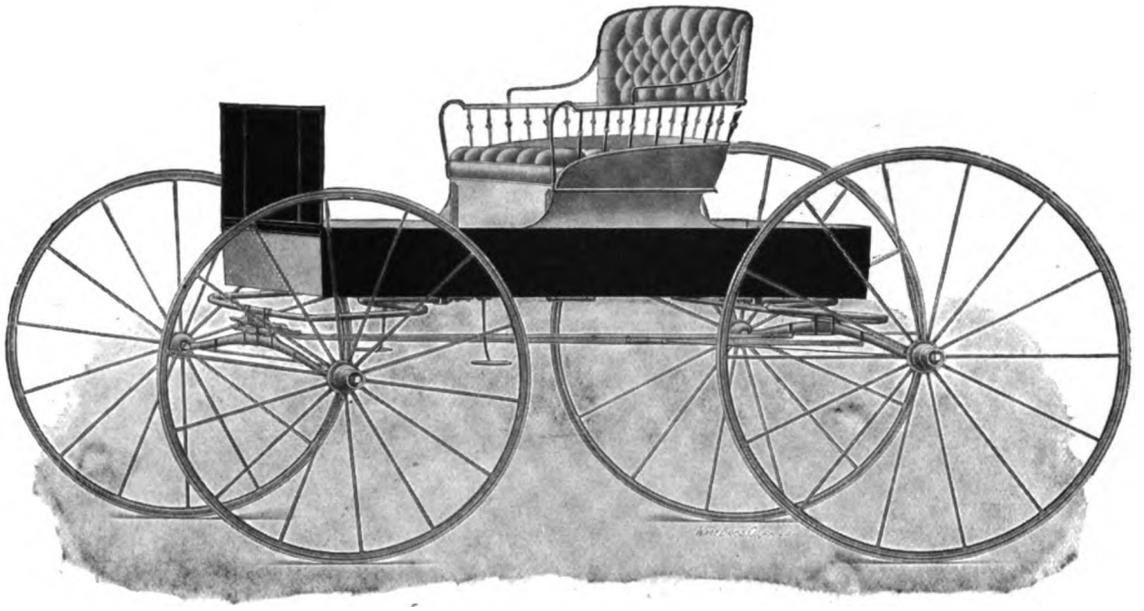
PLATFORM GEAR DRAY.

Built by Parry Manufacturing Co., Indianapolis, Ind.



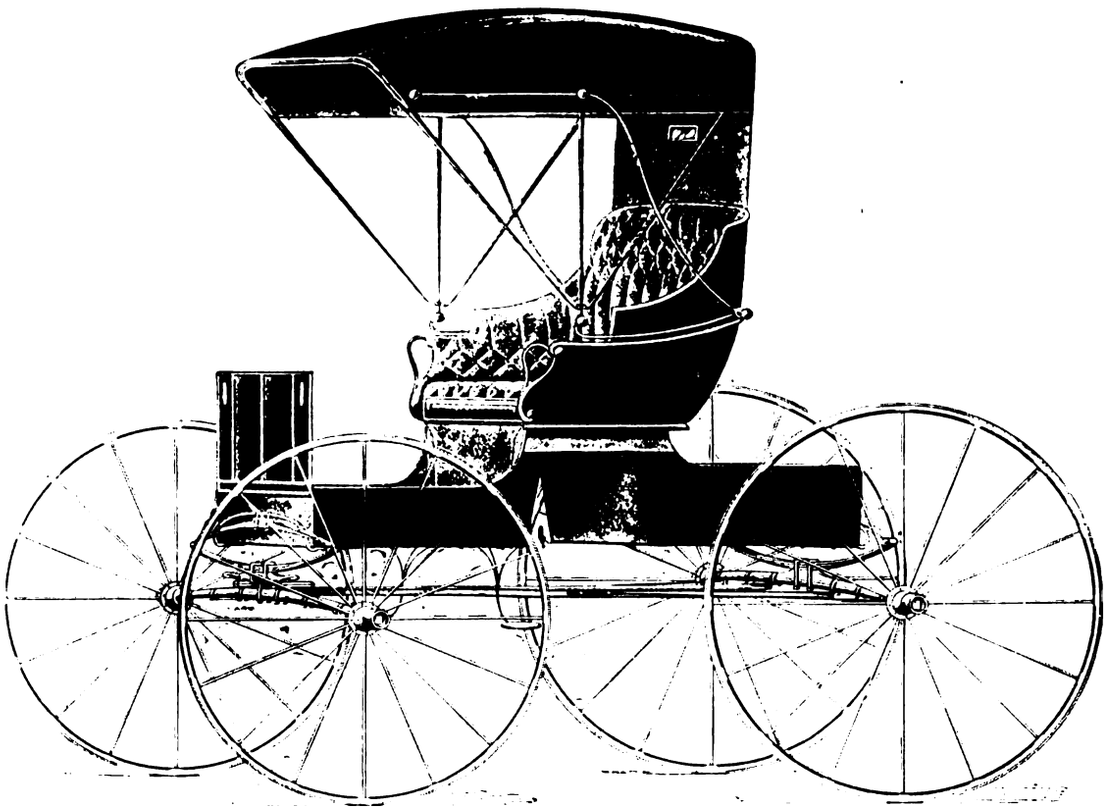
COMBINATION SPRING WAGON.

Digitized by Google



DRIVING WAGON WITH SHULER SPRINGS.

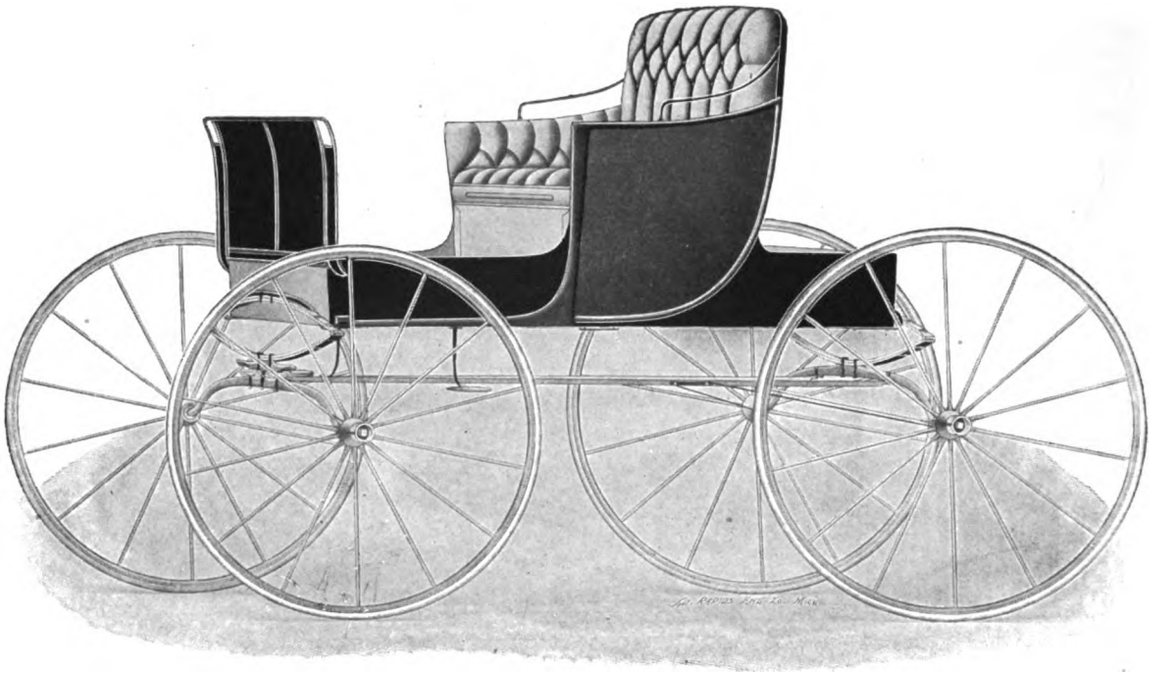
Built by Kentucky Buggy Co., Owensboro, Ky.



CUT-UNDER BUGGY WITH AUTO SEAT.

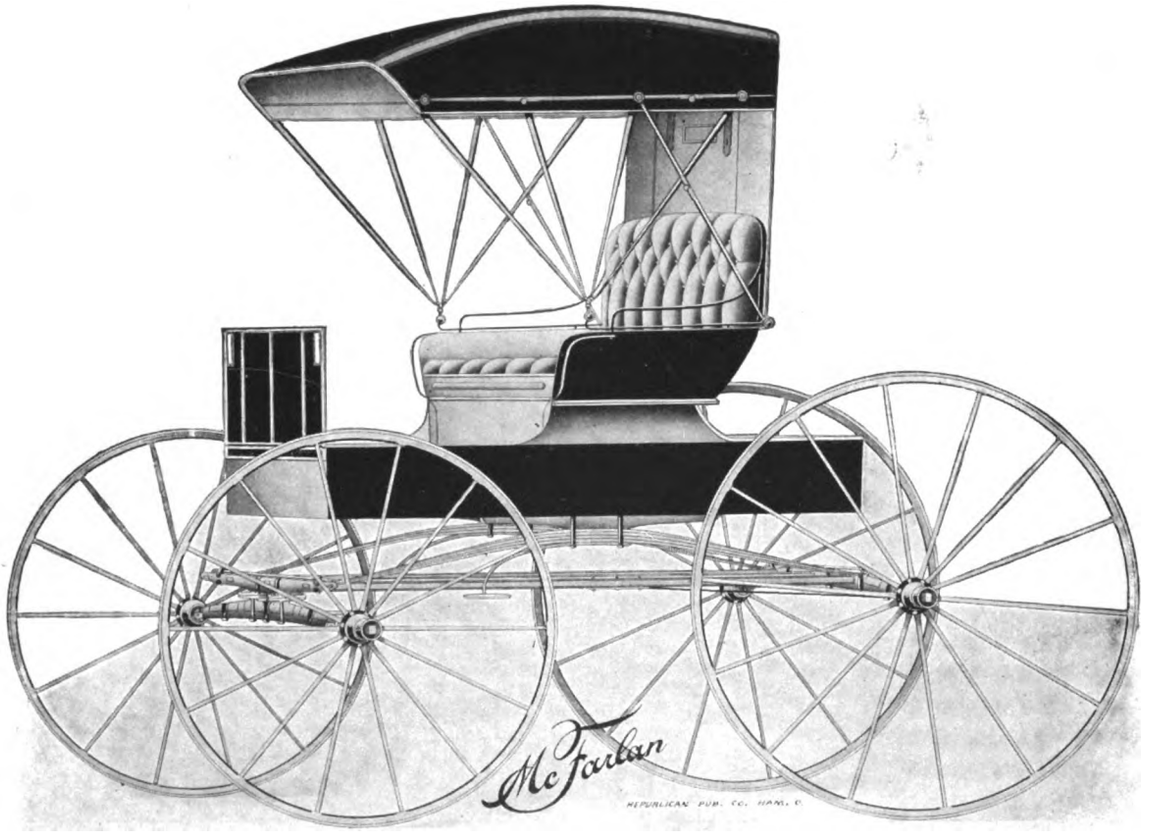
Built by Sechler & Co., Cincinnati, Ohio.

Digitized by Google



PHAETON-SEAT RUNABOUT.

Built by Peabody Buggy Co., Fostoria, Ohio.



MEDIUM WEIGHT ROUGH COUNTRY CONCORD.

Built by McFarlan Carriage Co., Connersville ,Ind.

Digitized by Google

NEW FORM OF TOP FOR MERCANTILE VEHICLE.

Illustrations accompanying.

In this article we illustrate and describe a new and improved form of hood for commercial vehicles—both horse-drawn and motor driven—that is being applied to the tops of express wagons, furniture trucks, moving vans and kindred vehicles.

A builder recently receiving an order for a vehicle with top of this character appealed to us for information regarding its construction. For his benefit, and others who may contemplate its adoption, we give detailed description with illustrations.

In Fig. 1 a section of an express top embodying the form of

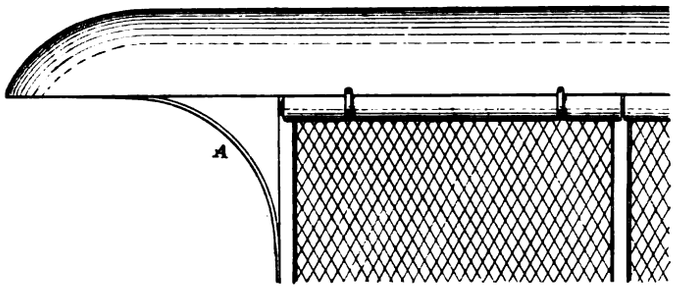


FIG. 1.

hood in question is shown. In this diagram we show its exterior appearance when covered with oiled duck, the material usually employed. The stay, A, is secured to the rail of top and front bow, and it not only strengthens and stiffens the top at that point, but it tends largely to enhance its effect. The stay is large and bent in a long graceful curve.

The construction of top is clearly shown in the skeleton views. Fig. 2, half plan, and Fig. 3, side view. In the plan it will be observed at B that the front corners are rounded, a shape obtained by splicing a bow, horizontally, to the top rail C. Midway between the front supporting bow and the extreme front of hood, or where the top line begins to turn downward, is placed a bow, as indicated at D D in Figs. 2 and 3.

To this bow is screwed a series of 1½ strips of band iron,

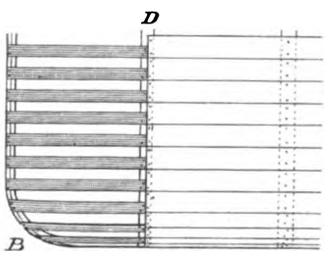


FIG. 2.

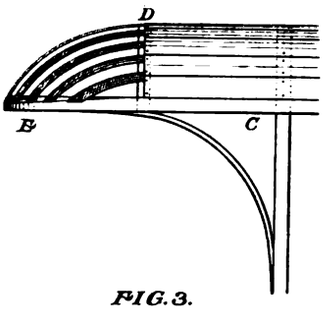


FIG. 3.

1½ in. apart, after they have been hammered into shape by the smith to conform with the pattern given him as a guide to work from. This, however, applies only to those strips which are intended for the straight lines of bows, when the outer sections where the bends begin are reached, the plates will require greater care in fitting and will necessitate much trying before securing permanently.

The bent rail E is beveled at the front to obtain a bearing for plates. This bevel must gradually be worked or merged into the vertical side of rail before it reaches the bow D, to secure proper bearings.

From the center of bow D to the rear edge of top, the bows are covered with wainscoting, three or four inches wide. This is done to preserve the correct shape and overcome any possibility of sagging.

After the metallic strips and wainscoting are screwed and nailed in place, the builder should be careful to have everything leveled off, so that no sharp corners will protrude through the duck and disfigure its outer surface.

The adoption of a top of this style adds a few dollars in material and labor to the cost of production of the job, but it also increases its general appearance materially, which counteracts the small additional outlay in cost.

THE NEW BREWSTER BUILDING.

The new factory for Brewster & Co. to be built at the plaza of the Queensboro Bridge, Long Island City, from plans by Stephenson & Wheeler, presents some interesting features as a building proposition.

This factory is an instance of the appreciation of a great firm of the importance of combining on legitimate lines good architecture with that which is purely commercial and constructive.

This building is to be made of reinforced concrete, so far as the structure goes, this method of construction being cheaper and more adapted to factory buildings than any other. But concrete does not offer in a building requiring a great amount of light and but little floor space any architectural possibilities.

The facade is designed on simple lines, of North River brick, with artificial stone trimming and copper roof, and grouping of windows and arrangement of pylons are simply a variance of the ordinary factory front so as to provide the architectural dignity, which a building of this character in such a locality should have.

The facade is surrounded by a clock tower 165 feet above the sidewalk.

The style is in the free modern French school, which so readily lends itself to the many phases of practical construction to-day in America.

The building has a front of 202 feet on the plaza and extends back 352 feet in Radde Street and a somewhat less distance in Prospect Street.

It is six stories in height and will be equipped in the most up-to-date manner for the construction of automobile bodies and carriages of the highest class.

NEW BRIDAL COACH OF PURE WHITE WITH GOLD TRIMMINGS.

"Aside from an order for twelve limousine bodies, we have recently received one of the most unique orders in our career as manufacturers of coaches," said Mr. Duhamel, of Duhamel & Sons, one of the oldest and most prominent carriage builders in Brooklyn, N. Y.

"A large carriage company in Manhattan has placed with us an order for a pure white Berlin four-seater. Everything on the coach must be white except here and there some gold trimmings. Its inside draperies and upholsteries will be white, as well as the outside lamps and varnish. As far as we know, and we have been in the business for more than thirty-five years, we have never heard of any coach of a similar nature or design ever made before this one. We believe when this one is completed that it will be the only one in existence."

"For what purpose will it be used?"

"Why, I think our patron will endeavor to introduce and utilize it as a bridal coach. I think it will be popular. It certainly is novel."

The Duhamel plant is equipped with the most modern improvements and latest mechanical devices. It is four stories and has a 7,500 square foot capacity on each floor.

A TOUR OF THE FACTORIES.

Secretary W. A. Merrifield, of the Carriage Manufacturers' Association, will make a tour of the vehicle factories of the country. This will enable him to gather a great deal of information which cannot help but be of immense benefit to the trade.

Digitized by Google

STANDARD LEATHER CO. REORGANIZED.

Geo. Lappe and Wm. J. Harvey Now in Control—Strong Financial Backing.

George J. Lappe and Wm. J. Harvey, of the Union National Bank Building, have purchased the controling stock in the Standard Leather Company, which in future will be known as the Standard Leather Company of Pittsburg. The company was established in 1840. The company will aim to produce high-class leather for the automobile, carriage, furniture, saddlery, dash and shoe manufacturers, and will likely add strap, bag, case, pocket-book and book-binding leathers to its output. The capital stock is $400,000, fully paid in.

The following board of directors was selected at a meeting July 26: George J. Lappe, president and general manager; William J. Harvey, vice-president and treasurer; J. W. Edmundson, secretary and assistant treasurer; Frederick W. Miller and Edward Schreiner.

The reorganized company has a very strong board financially and otherwise, and will put forth its very best efforts to manufacture leather second to none on the market. The management with the active officers are all young men full of business energy and push.

Mr. Lappe, who has been in the leather business all his life, will look after the manufacturing end of the business. He will gather about him the very best workmen in all departments, and all the up-to-date ideas and machinery to produce high-class leather will be incorporated. Mr. Harvey, whose standing as a financier is well known in Pittsburg, Pa., will have charge of the financial end of the business. Mr. Edmundson, as secretary and assistant treasurer, will aid Mr. Harvey with his past experience with the old company.

The newly organized company will be represented in Jackson, Mich., by Randolph-Edwards Co., and in St. Louis, Mo., by Geo. B. Ogden, well-known concerns in the cities named and generally among the leather buyers.

TAFT GRANTS THE FLICKINGER PLEA.

Authorizes Commutation of Sentence in the Case of Galion Manufacturer.

President Taft on July 12 commuted the sentence of Edward E. Flickinger, Galion manufacturer now serving his term in the Ohio penitentiary, from seven and one-half years to four years, which, with good time, means that Flickinger will be released February 20.

When informed of his good fortune Mr. Flickinger expressed much gratification.

Although in a serious condition, Mr. Flickinger is said not to be in a critical state. A Washington dispatch said the commutation was granted because of his health.

Flickinger commenced serving his sentence Jan. 23, 1907. His case was a conspicuous one in Ohio, and involved complications of high finance. He formerly was president of the Flickinger Wheel Company and president of the Vehicle Wheel Club, composed of many of the leading wheelmen throughout the country, and was connected with the Galion Wagon and Gear Company and other manufacturing enterprises. He was not in any way connected with the Galion bank, but President Hayes, of that institution, was treasurer of the Flickinger Wheel Company and of the Galion Wagon and Gear Works. When the bank failed, out of a total of $412,000 in loans and discounts, about $337,000 was paper of Flickinger concerns. Hayes' application for pardon was denied in May, 1908.

Flickinger is more than 60 years old, and prison physicians have reported that it is doubtful if he can survive six months further confinement.

D. M. PARRY ORGANIZES AUTOMOBILE COMPANY.

Reasons for Retirement from the Buggy Concern, Will Produce Medium Priced Machines.

Indianapolis is to have one of the largest, if not the largest, automobile factory in the country within the next few months, according to plans which are being perfected by D. M. Parry, who recently resigned from all active connection with the Parry Buggy Company. Mr. Parry has organized a company with a capital of $1,000,000, to be known as the Parry Auto Company.

Mr. Parry says the new plant will employ two thousand persons, and that it is the intention to turn out not fewer than five thousand cars in 1910, the first year. He has not yet decided on the location for the factory, but has several sites under consideration and will make a decision soon. It is probable that temporarily the company will use buildings already erected, but later on a new plant will be built. Mr. Parry declined to state the locations he had in mind until after he had closed a deal.

To Be Called the Parry.

The car which the new company will manufacture will be called the Parry. Two styles will be made, one a runabout that will sell for $1,250 and the other a four-cylinder, 30-horse power, five-passenger touring car that will sell for $1,400.

Not long ago Mr. Parry announced his retirement from active connection with the Parry Buggy Company, although he retained all his financial interest in the concern. At the time it was said that he would retire from business. However, such was not his intention.

WANT LOWER RATES TO TEXAS.

A committee of shippers of the middle west recently met in Chicago the executive officials of railroads leading to Texas, and demanded a more equitable adjustment of rates to Texas points, as against the rates from the seaboard and eastern territory, made by the coast steamship lines.

The carload rate on agricultural implements or farm wagons from the middle west to Texas common points is 79 cents per 100 pounds. The steamship lines can lay goods down to many points in Texas at considerably lower cost by using the rate of 30 cents from that territory to New York, the steamer rate of 20 cents from New York to the gulf ports, and rates from 15 cents to 25 cents from the gulf ports to Texas inland cities. The steamship lines not being subject to the interstate commerce act can make any rate they find necessary for their haul from New York to the Texas gulf ports.

AMERICAN EXPOSITION AT BERLIN.

All arrangements have been perfected for holding an American exposition at Berlin in the months of April, May and June, 1910. This exposition is designed primarily as an exhibit of distinctively American products, and the management is especially desirous that American manufacturers of novelties shall take part. The intention is to make apparent to the people of Europe, and especially Germany, the importance and excellence of American manufacturers, and to this end the German committee will advertise the exposition throughout the German Empire and elsewhere, and will co-operate with American manufacturers and exporters in every way to popularize and exploit American products. Baron R. von Brandenstein is at the head of the German advisory committee, and Dr. George F. Kunz, of New York, is at the head of the American committee, the headquarters of the latter being at 50 Church street, New York, and Mr. Max Vieweger is in charge. It is announced that the price of space per square foot will be $4, which will include all incidental expenses. Blank applications for space and all information in regard to the exposition may be obtained from Mr. Vieweger.

Digitized by Google

THE NEW STEEL WHEEL.

Time worketh many changes, and in the passing evolutionizes methods of manufacture, causing the old school mechanic to sit up and look on in opened-eyed amazement. The wheel has been a topic of no end of thought and speculation. Hundreds of patents have been granted, but, like many of the new-fangled ideas of theorists, have eventually been abandoned. Genius, however, knows no limits. Each effort gives new experience, and continued trying oftentimes brings a degree of success far beyond the anticipation of the student.

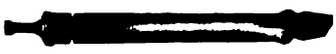
In the manufacture of wheels the cry has been going up for years that slow-growing timbers for wheel construction was becoming so scarce that wheel manufacturers could see in the near future a complete demoralization of a great industry. They have, however, under existing conditions continued to produce and prosper, although it is a well-known fact that the timber has to come from more distant points, adding somewhat to the cost of the raw material.

Inventive genius has had but one idea in relation to the wheel of the twentieth century, and steel is and has been the basic principle on which they have worked. The vehicle trade has had considerable experience with metal wheels, the most successful of which was that of wire construction, which commanded a lot of attention a few years ago. A metal wheel may be all quality and give best of service and satisfaction, but the inventor must remember one thing, and that is, that the vehicle wheel of to-day is recognized as being as near perfection as it is possible to make it. Consequently to build a metal wheel that may hope to take the place of wood wheels the new wheel must take on the character, style and general appearance of the perfect wheel of to-day.

Alas! this has been done, and as the new metal wheel is a reality—containing all the features and appearance of the present-day vehicle wheel—The Hub presents for the benefit of the trade and its readers facts and illustrations from the hub to the finished product.

The hub consists of an inner and outer pressed steel case, made from the best quality deep-drawing, open-hearth steel. The inner case is made from number 16 gauge stock, in two parts, telescoping in the center, under the spokes.

A hard-wood core is securely clamped in each half of the inner case or shell, fitting snugly together, forming a solid wood core, thus permitting the placing of any size boxes. The outer cases are made from number 12 gauge stock and fit over inner case. It is heavily embossed, the ends are falsed wired, thus increasing the strength of the hub and reducing the possibility of damage by contact with other objects. The hub is clamped in position by eight bolts which are the only bolts or rivets used in the construction of the wheel.



The spokes are made of the finest quality cold-rolled, deep-drawing, number 20 gauge steel. They are made in one size—1⅝ inches—but in three weights and strengths, single sheets, half laminated and laminated throughout. The bolt holes are drawn in each side of the spoke, thus permitting the bolting on of hub flanges in perfect position.

Nearly all the dish of the wheel is made in the spoke. The tenon is made of cold-drawn bar stock and brazed in place on end of spoke, as shown in above cut, and has a double bearing, one at shoulder on face of rim, the other at extreme end on tire.

Shows section of hub with spokes in assembled position, ready for bolting.

The rim is made of one piece D-shaped, number 16 gauge,

seamless tubing. The ends are electric welded, making one continuous piece.

The sixteen tenon openings where the tenons on spokes enter, are pierced and flanged, giving the spoke one-half inch bearing at shoulder.

The tires are set without the use of a shrinker and use no bolts to hold them in place.

Above illustration is made from actual photograph and certainly might easily be mistaken for an ordinary wheel, but what adds to its credit is the fact that this wheel has stood up perfectly under a three years test, and its record shows no repair bills, no loose tires, no split spokes or rims, or any other of the troubles that are natural to the lot of the wheel.

The wheel is perfectly proportioned and claimed to be four times as strong as wood wheel of its size and much lighter. The parts are interchangeable. A wheel that is equally good in all climates.

EVANS NAMED AS SECRETARY OF NATIONAL ASSOCIATION.

After nearly ten years of continuous service as traffic manager of the Kingman Plow Co., W. J. Evans will sever his connection with that concern on August 1.

He has resigned to accept the position of secretary of the National Association of Agricultural Implement and Vehicle Manufacturers, with headquarters at Chicago, Ill., and will remove to that city the latter part of this month. He has likewise resigned the chairmanship of the Peoria Shippers' Association, which position he held since its organization.

Digitized by Google

TWO CARRIAGE CONCERNS MERGE AT WATERTOWN, N. Y.

The H. H. Babcock Co. to Manufacture Automobiles on a Large Scale.

The H. H. Babcock Company and the Watertown Carriage Company, of Watertown, N. Y., have been consolidated into one corporation under the name of the H. H. Babcock Co.

The management of the new corporation will be under the direction of George H. Babcock, of the H. H. Babcock Company, and William J. Mills, of the Watertown Carriage Company.

The companies were united upon the basis of the actual net value of the assets of each, upon the appraisal of the respective properties made by the American Appraisal Company. The capital stock of the new corporation is in the neighborhood of one million dollars.

It is the purpose of the new organization to continue to manufacture carriages on a larger scale than ever, and also to enter upon the manufacture and sale of automobiles. The properties of the two companies are splendidly equipped for such purpose, and very little added expense will be necessary in order to prepare them for the construction of automobiles. It will be several months before the new corporation will enter upon the additional production of automobiles along the line which they have in mind, as it will take considerable time to perfect the details of the consolidation. It is expected, however, that it will have automobiles of various styles on the market for the season of 1910.

Both the Watertown Carriage Company and the H. H. Babcock Company bear the best of reputations for the production of carriages and vehicles of the highest quality of the various types which they produce. Their agencies extend throughout the United States and in foreign countries. Both plants have been successfully operated.

The carriage end of the business will be conducted under the old names as in the past, although the management will be under one head. In other words, the Watertown Carriage Company will continue to build, sell and ship carriages under that name, while the H. H. Babcock Company will do the same under the name of the H. H. Babcock Company. The automobile business will, of course, be run under the name of the new company, the H. H. Babcock Co.

VEHICLE PRICES GO UP 10 PER CENT.

Vehicles will be advanced 10 per cent in price by the Wholesale Carriage Manufacturers of America. The reason for the increase as given is that the increased cost of labor and materials makes it necessary. The advance, which has been contemplated for some time, was finally decided upon when the manufacturers' association met at the Congress Hotel in Chicago on August 4. Announcement of the increase was made by W. A. Merrifield, secretary of the organization.

"The rapid growth of the automobile industry is conceded to be one of the strongest factors contributing in a competitive way to advance the cost of labor and materials required by carriage manufacturers," he said. "Skilled artisans are leaving in large numbers to accept more lucrative positions offered by automobile manufacturers, making it necessary for the carriage manufacturer to advance not only the wages of tradesmen affected by this defection, but make a general advance throughout all departments."

WILL HANDLE AUTOS.

E. D. Crane & Co., for many years in the vehicle and harness manufacturing business at Atlanta, Ga., have taken on a line of automobiles, which they will push. They have secured the agency for the Firestone-Columbus, Columbus Electric, Regal and Hupmobile for the northern half of Georgia.

CARRIAGES IN PALESTINE.

Kinds of Vehicles and Wagons Suitable for That Country—The Seasons.

In answer to a Cincinnati carriage manufacturer, Consul Thomas R. Wallace, of Jerusalem, reports as follows concerning the carriages and vehicles suitable for Palestine:

American vehicles are highly thought of here, but when costly freight charges are added to the price of the vehicle it stands a poor chance for sale in competition with others made in the vicinity or brought from countries having the advantage of direct communication as well as cheap freight.

To meet the requirements of this market a carriage should be strong, well made, and plain. It should be large enough to seat six persons. The two seats in the body of the carriage, facing each other, should not be cramped, and sufficient space should be given both in the seats and between them that four persons may ride in comfort. This applies to the best grade, as most of the carriages are sold for livery purposes or to carry passengers. The larger number in use have a short bed with a "jump" or adjustable seat; but, as long journeys are taken in them, it will be seen that the commodious carriage has the preference, especially when there are more than two passengers, which is usually the case.

The body of the carriage is "cut under," so that the front wheels pass beneath, permitting the vehicle to be turned in the narrow streets. This gives an elevated seat for the driver, which should be large enough for two persons. A powerful brake should be supplied, placed in a convenient position for use. High-class work and fancy ornaments and finish are not so much required as a good, strong vehicle adapted to the work in which it will be used, so that it can be put upon the market at such prices as will meet competition.

There are a few light wagons, used for carrying passengers, seen here, which have been put together and in part made from stock purchased in the United States. This is a light, covered spring wagon, with three seats. It is about the same style of wagon as that called in the West a "Democrat," with a top added. These wagons have given excellent satisfaction, but there is little demand for them. Road wagons are beginning to be used more generally for carrying heavy loads. Those seen are of the cheapest kind, consisting of the running gear with a few loose boards for the bed.

There are two seasons, the wet and the dry, the wet season being the winter. Although it scarcely ever freezes on the highest points of Palestine, yet very heavy rainfalls occur during the season and the air is filled with moisture. The winter is the season of the greatest activity in the passenger traffic by carriage and the time of the most reckless driving. The summer season is very hot, although the temperature is never felt to be excessive because of the prevailing winds from the sea. These winds are very constant, the air is moist, and heavy dews are common at night.

At short intervals, especially in what corresponds to our spring and fall, an east wind prevails, during which time the air becomes hot, scorching, and very dry, seriously affecting inanimate objects as well as living beings. This weather is the most serious in affecting vehicles. Driving after nightfall is often necessary, and therefore good side lights should be furnished, or attachments provided for their use if desired.

The address of a firm in Jerusalem which imports American vehicles from time to time, and which is frequently consulted by intending buyers, is herewith transmitted. Catalogues and price lists should be sent to this firm, and also to this consulate, to be kept for the use of interested parties. (Address mentioned is on file in the Bureau of Manufactures, Washington, D. C.)

Fries Bros., Davenport, Ia., have extensively increased their facilities for wagon and buggy building and repair work, by the installation of the latest in power machines.

Digitized by Google

PAINTING AND UPHOLSTERING

ESSENTIAL PAINT SHOP CONVENIENCES.

Even the smallest paint shop proprietor should make a brave attempt to establish as many conveniences as possible in and about his shop. We talk knowingly about advertising helps, about trade secrets which put the possessor a little closer to assumed profits, and in numerous ways methods of doing work and transacting business are discussed and take definite form, but usually shop conveniences appear, for the most part, to be far from what we have reason to expect them to be. The old handicaps are in evidence, and the cry goes forth, as it has done for a generation, that "the paint shop don't pay." This species of lamentation should arouse no sympathy. At no time within the memory of the writer have trade opportunities for the carriage and wagon painter been greater or more plentiful. The automobile industry has created a large demand for competent painters, and the odoriferous machine comes, figuratively, knocking at the door of the jobbing paint shop. It is in a practical sense a case of "now or never" with the vehicle painter, and should he prove unequal to the emergency the fault is his. The Hub is not advocating, nor suggesting, even, elaborate improvements which belong to the revolutionary class. It simply has in mind at this time those directly essential devices intended to increase the shop's output and safeguard its interests. Possibly your shop has nothing more than a saw-buck wheel jack, acceptable in its day, but now practically obsolete. Why not at small expense construct, or even buy, a revolving one, or two, or three, or more of them, as the size and needs of your shop indicate? All-metal ones at $1.25 are to be had. There are a number of different styles, made partly of wood, some of which have been illustrated in former issues, that are effective enough to suit anyone. Revolving body trestles are likewise a necessity. With a strong, solid base, various revolving top frames, one for handling bodies, another for running parts, and still another for seats, large or small, can be used upon it to advantage. Study up the various patterns which have been published from time to time in the trade journals, and select one best adapted to your requirements. Then either make, or have one made, and get rid of the shaky sugar barrel. The latter stirs up more dust in being shuffled about the shop than a troop of school boys. Many paint shops have no shelf room or are lacking of enough. Good strong shelves are cheap and easily put up. Why not have them, and get many things which otherwise usually litter the floor up out of the way?

Racks for tops, cushions, fenders, carpets, dashes and the interior bric-a-brac of the carriage are essential to good paint-shop practice. Put them up of good, straight hemlock stuff from floor to ceiling, adjust on a shirring cord muslin curtains, after giving them a coat of thin shellac, and thus furnish a clean storage compartment for the loose belongings of the carriage.

Window shades should be attached to all the windows of the varnish room at least. Get them of the adjustable or roller pattern. In fact, all windows of the shop, except possible those in the painting apartments with a strictly north exposure, had best be equipped with roller curtains. There are times when a totally dark paint shop or varnish room is necessary, or, at any rate, an advantage. Window-sash throughout the shop should be arranged to lower at the top from the casing, and raise from the bottom. This does not, to be sure, afford the most desirable kind of ventilation, but it is wholesomely effective when other methods fail. Fresh air is indispensable both for varnishes, paints and painters.

A strong, good sized paint and material mixing bench, upon which a marble slab is placed, with such other accessories as local conditions demand, should be a sure fixture of the paint shop. It should be located in a position to command all possible light. Many painters drudge along with a drygoods box cover tucked up in a dark corner of the shop, and call it a mixing bench. The paint mill, a modern one, with all the modern fixings, should occupy a corner of the paint bench, or a place convenient to it. A cheap but effective protective cover for the mill may be had by utilizing boxes in which varnish shipments are received.

The shop runway, where the paint shop is located on the second floor, as it usually is, and the runway reaches up from the outside of the shop, needs to be watched and made strong, and given the least possible resisting incline, and at its upper extremity we have a right to find, and, indeed, should find, a nice, roomy platform where the traction mechanism for hauling up the vehicles is kept well under cover, and where on clear days much coarse and rough work, such as cleaning and preparing parts for coating up, may be done to excellent advantage. As a matter of fact, not a few of the primary and earlier coats may be applied with the outside runway platform as a working space. Out here, too, one can give some of these primary coats a weather bath to promote their drying, and to cure them out and eliminate poison fumes and gases. Some wide-awake painters have comprehended the possibilities of the runway platform, and have constructed a roof over it like the porch of a bungalow. Additional working space at certain seasons of the year, under propitious weather conditions, is thus to be had at no additional expense in rental.

Perhaps the most essential conveniences come in the form of tools for the taking apart and putting together of the carriage. Labor is paid to represent—and we believe the calculation comes very close to the mark—fully two-thirds the cost of painting and finishing the carriage. Accept your own figures to teach you the importance of maintaining a supply of tools adequate to the needs of your business. Hammers, cold chisels, punches, bolt clippers, screw drivers, wrenches of various sorts and kinds, saws, brace and bits, shaft couplers, jacks and so on, are among the tools to be kept in a chest convenient to the unhanging and hanging off space.

Other mentionable conveniences should include stationery with effective letter heads and a business look to it, and a book-keeping system that is really the corner-stone upon which the painting business of to-day must rest. Competition declares that good book-keeping represents one-half of any business. Incidentally there is no better demonstration of these things than this same world-old, all-embracing factor in human life, competition.

ECONOMY IN THE USE OF ROUGHSTUFF.

Roughstuff, when decently made up, is expensive, and when bought ready prepared for use costs, in case of a high-class article, any where from $2.25 to $2.50 per gallon. Upon repair work when a saving of this material may be made it is, therefore, worth while. Not a few old jobs with surfaces fractures and thumped almost out of shape in some parts, for the painting of which the owners set a niggardly estimate, can be treated in a way to save roughstuff and a certain portion of labor. The first thing after washing the job and giving it time to dry out thoroughly, go over the body surface with sandpaper and a steel scraper, and clean away any existing snarls of wood, and rasp up the course, rough patches and otherwise get the surface hard and firm down to he bone. Then, of course, lay

Digitized by Google

on a primary coat consisting of keg white lead and color, into which stir a quantity of oil to meet the actual needs of the surface, thinning out to a brushing consistency with turpentine. If the surface is badly torn up and uncovered to the wood, it is the better way to beat up some white lead and color into three parts of raw linseed oil and two parts of turpentine, and touch over these waste and bare places with the mixture. Stand aside until dry, then coat the surface over solidly as above described. Let this coat dry clean and hard, as it should if properly made up.

Then beat up one part white keg lead, three parts dry white lead and one part best bolted whiting into a stiff paste with equal parts of quick-drying rubbing varnish and coach japan, and let down a trifle with turpentine after running the stiff mass through the shop paint mill. With a broad, half-elastic scraping knife apply the mixture as a glaze, working it all out smooth and free from knife marks and wire edges. Let this "facing up" material dry twenty-four hours, when with a quick-drying go over and fill up all fractures and cavities. Make all such places flush with the surrounding surface. After another twenty-four hours coat the surface over with roughstuff, and the day following using artificial pumice stone or rubbing brick dipped in three parts raw linseed oil and one part naptha, proceed to rub the surface down to a smooth, level, compact film. The addition of naptha to the oil quickens the surfacing capacity of the stone, giving it a free cutting action.

Above this surface apply the color coats and carry out to a finish in the usual way.

THE SECRET OF GOOD VARNISHING.

Really there is no secret about it at all. It is as plain as the open book, in fact. You are aware, doubtless, that the nervous, the fussy, the pottering painter never made a good varnisher. The workman of courage, of confidence, of fine skill, who lays on varnish with a rich flow of material, who studies the work in every detail and from the standpoint of a student never too old nor too proud to learn, is one who knows the secret—or the simple law, if you please—of good varnishing.

Varnish rooms are rarely perfect, and as a rule ,decidedly deficient in many features which belong to an apartment where the daily work is highly difficult and extremely sensitive to varying weather conditions. Many of them are ill-provided with the furnishings which should be a feature of every varnish room. However, the varnisher of capability is proof against all the manifold disadvantages centering in the varnish room, and philosophically goes about making "the best of a bad bargain," or whatever sort of a bargain conditions may chance to furnish. And this is the temperament, coupled with skill, which lays bare the so-called secret of the varnish room and gets at the heart of things in a way to make good varnishing the rule.

BLACK JAPAN AND ITS USES.

Notwithstanding the outcry that was at one time raised against the use of black japan, both on account of its color and working properties, the material, as procured from reliable manufacturers and used under proper conditions, is to-day recognized among painters of high-class work as a very valuable help in producing a black surface of fine quality. When black japan was first introduced into this country, as our older readers will recall, it was employed principally in the blacking of irons attached to carriage bodies. It was at that time a comparatively crude product, and the American carriage painter after a trial of it refused to approve of it.

In these late years, however, and under the touch of American inventive genius, black japan has become, in the language of the liveries, "a horse of another color." A good black japan is sold at the same, or about the same, consistency as varnish, and while, as its makers admit, it is of a brownish tint when applied over tin or glass, it shows a beautiful and rare jet black when flowed over a black ground. It has the additional advantage of becoming blacker, if anything, when coated over with succeeding coats of varnish, whereas black varnish color takes on a greenish hue under following coats of clear varnish.

RIM MANUFACTURERS' ORGANIZATION.

The Rim Manufacturers' Club was organized at Cincinnati on June 23. The object of the organization is to further the fraternal relations of the bent rim manufacturers of the United States and Canada. The following officers were elected: President, John Breece, Portsmouth, O.; first vice-president, B. G. Lynch, Jonesboro, Ark.; second vice-president, H. J. Kimble, Zanesville, O.; third vice-president, F. N. Hara, Merriton, Ontario; secretary-treasurer, L. W. May, Steubenville, O.

Following are the charter members: Sheets Mfg. Co., Botkins, O.; Von Behren Mfg. Co., Evansville, Ind.; The Canada Wheel Works, Ltd., Merriton, Can.: E. A. Gillett & Sons, Boston, Mass.; Campbell & Dann Mfg. Co., Tullahoma, Tenn.; J. A. Leippe's Sons, Reading, Pa.: J. M. Skinner Bending Co., Toledo, O.; H. J. Kimball, Zanesville, O.; Manchester Mfg. Co., Manchester, Tenn.; Breece Mfg. Co., Portsmouth, O.; Cunningham Mfg. Co., Fostoria, O.; Vehicle Woodstock Co., Chicago; S. M. Skeen, Lancaster, Pa.; J. Burkhart & Son, Caldwell, O.; Gillet Bros., Memphis, Tenn.; Geo. W. Price, Crandon, Wis.; Skinner-Russell Co., Louisville, Ky.; Pioneer Pole & Shaft Co., Muncie, Ind.; May Bending Works, Steubenville, O.; Edinburg Spoke and Bending Co., Edinburg, Va., La Crosse Wagon Stock Co., Cape Girardeau, Mo.; Winchester Mfg. Co., Winchester, O.; Perry Bending Co., New Bloomfield, Pa.; J. F. Haury, Erhart, O.; Jonesboro Bending Co., Jonesboro, Ark.; Thos. Graham & Co., Madison, Ind.; J. F. Haury Bending Co., Central City, W. Va.; Windsor Turned Goods Co., Windsor, Ont.; Victoria Wheel Works, Galt, Ont.

VANADIUM VARNISHES.

As may be learned more in detail by reading their announcement, Valentine & Company present for the consideration of automobile body makers a varnish named Vanadium. It is a distinct departure and an entirely novel article in high grade varnish, compounded to meet with success the most trying and exacting conditions.

This varnish is particularly intended to resist the influence of oils, grease, sun, rain and mud, and yet retain its lustre remarkably under such trying conditions. Its brilliancy and durability are incontestable, and its habit of wearing bright is not the least of its many noteworthy qualities.

The extra pale grade of Vanadium is specially important, and its use by painters who have to meet the difficulties of automobile finishing, particularly light colored bodies, will prove an unmixed satisfaction.

Like all goods made by the company, it has long since passed the experimental stage and the severest tests before being offered to painters, so that it comes to them a tried, proved and finished product worthy of their acceptance and use.

Vanadium varnish is certain to make a great name among the high grade varnishes of the trade.

TRI-STATE VEHICLE DIRECTORY.

The Tri-State Vehicle and Implement Dealers Association, of which T. P. Rathbone, of Springfield, O., is secretary, has issued a directory of the "regular" retail vehicle and implement dealers in the States of Ohio, Indiana and Kentucky. The lines carried by the dealers are indicated. The several States are arranged in independent booklets. This is the first attempt to issue a directory of this kind, and it will no doubt be gladly welcomed by the trade.

Digitized by Google

NEW TANNING PROCESS.

Discovered or Invented by a German Chemist Who Will Not Sell It.

Offered $200,000, which he refused, for a process he has discovered that is bound to cause an upheavel in the tanning and heavy leather industry, an unassuming and little-known German chemist of moderate means is, according to a story going the rounds of the daily papers, to-day going about his daily tasks, indifferent to the fact that his discovery is causing uneasiness and alarm among the masters of the leather manufacturing world.

Anyone knows that sole leather costs good money and many others know that manufacturers and owners of machine shops the world over have for years been bemoaning the fact that their bills for belting leather ran so high. But it is not generally know that the high prices obtained for heavy leather used for these purposes are due to the expensive process of tanning the hides and the long period necessary to turn these hides into salable leather, which delay in making the hides marketable, locks up an immense amount of capital.

For many years now the tanners of not only the United States, but the world generally have been turning first to one direction and then in another, trying to find a new process of tanning leather. The tanners are to-day more uneasy about this matter than ever, for the reason that hemlock bark, upon which commodity the tanning industry depends, is fast becoming scarce. They know that the supply of hemlock will last only a few years longer and each year sees the price of hemlock bark becoming more prohibitory.

Years ago a high grade German chemist by the name of Schwarz invented the Chrome process of tanning now in general use in tanning the best grades of uppers and light grades of leathers. His invention or discovery, whichever one chooses to call it, revolutionized the leather industry, and was responsible for the establishment of the great tanning industries that are now located in Philadelphia.

Incidental to this change wrought in the tanning of leathers, the Chrome process, which was first used in the Quaker City along about 1886, was responsible for the making of fifty millionaires in that city alone.

Now, along comes another chemist, educated in the German universities, Adam Hoch by name, and living in Red Bank, N. J., with a process of tanning that outrivals the Chrome process and has set all the leather world agasp.

Hoch hasn't anything to sell the leather trust or anybody else in the leather business. He is an expert on tanning, made so by thirty years' close attention to that work. More than twelve years ago he discovered a process of tanning without hemlock bark far cheaper than the present process. Not only that, but by his method hides are turned into high-grade sole and belt leather in fourteen days, whereas by any known process to-day the best leather workers can do is to obtain the same results in seven months. Furthermore, experts admit that the hides tanned by this German chemist are superior in quality to those tanned with hemlock bark and treated for several months.

For seven years Hoch has been operating an experimental plant in the quiet of the New Jersey town, perfecting his discovery. His process has been passed upon to the satisfaction of the Associated Leather Trades of New York State, and the leather trust from time to time have made overtures to him to adopt his process. But this wise German chemist, with the shrewdness of his race, has declined to enter into any dealings with the combine. Several months ago an offer came to him from that source of $200,000 and a position for the rest of his life, but it did not appeal. Lately, it is understood, a far more substantial offer has originated from the same source.

But having proved to his own satsfaction and that of the leather experts that he has a process that will upend the methods of treating leather so that it can be placed on the market in fourteen days, Hoch appears satisfied to keep control and reap the rewards that are sure to be his, into the millions, apparently.

What Hoch's process or method is, remains a secret with him. All that is known about it is the facts that it does not require hemlock bark, the most important factor in the tanning trade, and the further fact that, owing to the short period required to treat a hide, his method will release the vast sums tied up in hides for seven months, while undergoing the process of being made into sole leather and belting.

Hoch has proved in his experimental Jersey tannery that with fifty men he can tan 1,000 hides a day, whereas at the present time to accomplish the same result, a force of 600 men are necessary.

In a roundabout way, in fact by way of Hoch's German home town, more than seven years ago two New York capitalists of large means became acquainted with what Hoch was trying to accomplish. As his experiments went on, these men, who have unlimited means, became more and more interested in Hoch's work and for several years back they have made possible his carrying on experiments in tanning, and it was through their means that Hoch was enabled to equip his experimental plant in New Jersey, where he has been at work.

With their further aid and confidence, Hoch now proposes to give the advantages of his discovery to the world and cheaper sole and belt leather will be the result. How the leather trust will take to the idea remains to be threshed out, but what the Chrome process of tanning did to the industry many years ago, is about to be repeated under the Hoch formula with tenfold energy.

Hoch is going to begin by giving hides to the trade—tanned under his method from a well-equipped factory plant in Newark, that went by the wayside some years ago, when the leather trust began throttling rivals. There is no better appointed tannery in the country, and it is said to have within its big walls modern machinery worth at least $300,000.

UNIFORM CLASSIFICATION PLANNED.

The railroad and steamship interests of the country have undertaken the making of a freight classification which shall be uniform in rules, in names and descriptions of articles, in package requirements and carload minimum weights, and which may be put into operation uniformly by all the transportation companies of the United States.

The work is to make the "southern," "official" and "western" classifications similar in all respects except the classes of ratings to which the various articles of freight are assigned. The committee having this work in charge is not considering any general revision of the classes or ratings. The committee is composed of nine railroad traffic men, who have been engaged in this work for the past two years.

The making of a uniform classification is a big undertaking and the classification committees need the manufacturers' assistance in arriving at a satisfactory conclusion in regard to the various agricultural implements. It is to the manufacturers' interest that they co-operate with the committee.

A CLEARING UP OF ENGLISH PATENT RECORDS.

If you take out a patent in England these days, and do not manufacture the invention there and keep it before the public, your patent becomes void in a very short time. It might seem a little hard on some who want to protect their rights for future development, and yet want a few years in which to develop them, but, on the other hand, it does much to clear the patent records of an accumulation of inventions that may stand in the way of progress. It would be a good idea if we had something here to clear a lot of unused accumulation from the patent records and leave the field clear for new inventions.

Digitized by Google

SAVING IN THE SUPPLY OF HICKORY LUMBER.

The Forest Service of the United States Department of Agriculture in 1906 started an investigation to determine the true strength values of the different species and color of hickory lumber.

The Forest Service co-operated in this work with the National Hickory Association, and in so doing planned their work so as to investigate such facts as would have a bearing to produce a more economical use of hickory.

Former investigations of the Forest Service developed that the supply of hickory in the United States was becoming less and less each year, and its total exhaustion was estimated at from twelve to twenty years.

The results of the investigation of the mechanical tests were published in circular 142 of the Forest Service.

This circular has been a basis upon which standard grading rules have been prepared, and put into practice in the wheel, rim and spoke industry.

The tests showed that there had been a discrimination against red hickory. The tests showed that red hickory of equal dry weight, had the same strength as white hickory.

This applied not only to vehicle woods, but to handles and other lines of industry using hickory.

The Isthmian Canal Commission, one of the largest purchasers of hickory handles in the world, in circular 441, issued May 4, 1908, specify for approximately 100,000 handles to be strictly second growth clear white hickory.

After the issue of the Forest Service bulletin, and a careful consideration of the matter by the Canal Commission, they changed their specifications for 1909, and on April 17 issued circular 506, which states to be of strictly clear hickory, etc., each handle to contain not more than one-third red wood.

This should enable the handle manufachturers to dispose of the partially red handle and should have a large effect on the general buying trade.

This will enable the handle manufacturers to go into the forest and cut the red hickory, and bring same to their factories, which in the past they have been allowing to lie in the forest and rot, and consequently cause an enormous loss of hickory lumber.

This is a very practical application of the work being done by the Forest Service in order to conserve the supply of lumber in the United Statees.

GREAT DECREASE IN THE VALUE OF CARRIAGE IMPORTS AT CAPE COLONY.

The foreign trade of Cape Colony, says Consul R. B. Mosher, of Port Elizabeth, in carts and carriages for 1908 amounted to $88,000, as against $152,000 for 1907 and $260,000 for 1906, showing a loss in 1908 of 57 per cent from 1907. The United States supplied $75,000 of the $152,000 imported in 1907, or 49 per cent, and the United Kingdom $40,000, or 26 per cent. Although in 1908 the total imports fell off 57 per cent, the share of the United States in the total rose from 49 per cent to 55 per cent, and that of the United Kingdom fell from 26 per cent to 16 per cent, each country losing the same amount in value.

The causes which have led to the heavy decline in the imports of vehicles are the depression in trade and the high customs duty of 25 per cent ad valorem. American light-weight, low-priced carts and traps have practically no competitors, and give great satisfaction. British competition applies only to the higher and more expensive class of carriages, and colonial competition only to heavy wagons.

The customs duty on carriages, carts, coaches and wagons (not including motor cars or cycles) and finished parts thereof is 25 per cent ad valorem, with a 3 per cent ad valorem rebate on those of British manufacture.

CONVENTION DATES NAMED.

National Association to Meet in Chicago on October 27, 28 and 29 Next.

The National Association of Agricultural Implement and Vehicle Manufacturers will hold its annual convention in Chicago on Wednesday, Thursday and Friday, October 27, 28 and 29. This was determined at a meeting of the executive committee of the association which met in Chicago on July 7.

At a subsequent meeting the committee decided to make the new La Salle Hotel headquarters of the convention. The La Salle will be completed about September 15. It is one of the largest hotel buildings in the world. The location is at the corner of La Salle and Madison Streets.

H. M. Kinney, of Winona Wagon Co., and W. H. Taylor, of Kingman Plow Co., were named as committee to prepare the convention program. It is stated that another member will be appointed later to assist in this important work. They will begin their work at once, and a most excellent program will be made up, without doubt.

The committee selected W. J. Evans, traffic manager of Kingman Plow Co., as secretary, to succeed J. T. Morrison, who resigned some weeks ago.

ALUMINUM WELDING.

Aluminum cannot be welded to aluminum by means of a blow torch, although it can be welded to other metals in this manner. Uniting aluminum to aluminum by means of solders of various kinds has also been more or less unsatisfactory, since the solder and the aluminum, being two different metals, form a sort of battery in the presence of water and the electrolytic action thus set up gradually corrodes or eats away the metals, resulting finally in a poor joint for electrical work.

The inability to make a good weld is due to the fact that at the high temperature which must necessarily be employed, a skin or film of oxide forms on the surface of the aluminum to be welded, and this film despise its extreme thinness prevents the fused edge or surface of one piece from uniting with the fused edge or surface of the other piece.

In order to make such a weld possible, a process has been patented by Max Ulrich Schoop, of Bois Colombes, France, which employs a special flux which will reduce the layers of oxide which are formed, and using preferably theoxy-acetylene flame as a source of heat. This mixture consists of

Potassium chloride	60 parts
Sodium chloride	12 parts
Potassium bisulphate	4 parts
Lithium chloride	20 parts

It is preferably fused in a platinum dish, then crushed in a mortar and sufficient water added to form a thin paste. If a blow pipe flame of lower temperature than that produced by the oxy-acetylene flame be employed, such, for instance, as that produced by oxygen and illuminating gas, or oxygen and hydrogen, it is desirable to increase the proportion of potassium bisulphate in order to lower the point of fusion of the mixture.

ANOTHER INDIANAPOLIS AUTOMOBILE.

The Empire Motor Car Company has been organized at Indianapolis, Ind., by A. C. Newby, Carl Fisher, James Allison and Robert Hassler to manufacture low-priced cars. The concern has started business in the Rumsey or old Mohawk bicycle works at West Twenty-ninth street and the canal. The first two cars are expected to be finished early in August. The car will be marketed under the name of Empire, and will sell for $800. It will have a four-cylinder, 3½ by 4 in. motor, selective sliding gear transmission, shaft drive, a wheel base of 96 in., and will be equipped with 32 by 3½ in. quick detachable tires. The company plans to make 2,000 during the coming year.

Digitized by Google

SPECIAL TRADE NEWS FROM MICHIGAN

Newsy Notes by our Correspondent Concerning Well Known Carriage and Automobile Manufacturers in the Wolverine State.

Demand Light, but Prices Holding Up.—Wilson Critzer, of the Anderson Carriage Co. of Milwaukee junction, Detroit, which also operates garages at Woodward Avenue and Parsons Street, and on East Grand Boulevard, reports that the factory keeps busy supplying the demand for runabouts and top wagons, although the demand for carriages is somewhat lighter than it was a year ago. Prices are holding up well, wood, cloth and leather being high, with the prospect of going higher when the heavier demand comes in the fall. Freak wagons are a dead issue with this concern. The demand for the Detroit Electric, built by the Anderson Carriage Co., continues to be brisk. The outlook for fall trade is most encouraging.

Traps Again Becoming Popular.—The Columbia Buggy Co., of Detroit, Mich., announces that traps are coming into vogue again, the present call for them, as well as for other styles of the family turnout, being remarkable. The market for runabouts and stanhopes remains firm, but the combination top carriage with the auto seat is the season's best card with this firm. This extraordinary call for the auto-seat vehicle comes even from remote country districts. The Columbia Buggy Co.'s general business is better than a year ago and business for the last few weeks has doubled over that for the corresponding period of 1908. The company held a "July clearance sale" and disposed of two hundred sets of harness.

Large Demand for Limousines.—Mr. Sievers, of Sievers & Erdman, carriage manufacturers at Jefferson Avenue and Beaubien Street, Detroit, said of the trade:

"Our sales just now are mainly of hearses, casket wagons and ambulances, and we are making a great many of them. There is plenty of heavy work and there is a large demand for limousine bodies. While we make some carriages, of course, the market can hardly be called active as a general proposition, outside of the lines mentioned. Rubber has taken a boost and the price of leather has gone up. Fall will surely see prices for materials even at a higher figure."

Lansing Wagon Works Gets Control.—A big deal was closed in Lansing, July 26, whereby the Lansing Wagon Works secured control of the carriage department of the Clark Carriage Co., one of the oldest concerns of its kind in Michigan.

Receiver Making Fine Report.—C. V. Taylor, receiver for the Standard Vehicle Company, of Pontiac, filed his final account in court and asked to be discharged. The report shows a balance on hand of $8,914 to be divided among the creditors.

Talking a Rubber Factory for Petoskey.—J. E. Randall, of Chicago, recently met a number of business men in Petoskey for the purpose of talking over the establishment of a rubber factory in Petoskey. Some stock already has been disposed of.

A Big Picnic.—The Flint Vehicle Works, nearly 3,000 strong, recently arrived in Detroit via the steamer Tashmoo, on their annual outing.

Hardwood Lumber Men Hold Annual Meeting.—The Michigan Hardwood Merchants' Manufacturing Association at its annual meeting in the Hotel Pontchartrain, Detroit, decided to make an effort to have freight rates on branch lines in Michigan decreased. Officers were elected as follows: President, Chas. A. Bigelow, Bay City; first vice-president, R. W. Smith, Manistee; second vice-president, G. von Platen, Boyne City; treasurer, Chas. T. Mitchell, Cadillac; secretary, J. C. Knox, Cadillac.

W. R. Timken Banqueted.—Officers of the Timken-Detroit Axle Co. recently gave a banquet at the Hotel Pontchartrain, in Detroit, to W. R. Timken, president of the company. Among those present were: Mr. and Mrs. A. R. Demory, G. W. Lewis, H. A. Alden, F. C. Gilbert and W. H. Hutton

A Legal Tangle—There has been considerable comment in Reed City of late over the status of affairs in connection with the Reed City Veneer & Panel Works. Not long ago the president of the company, C. A. Withey, brought suit against several insurance companies which carried policies on the plant. Those cases have brought up several other matters, and in the meantime a number of creditors—Reed City business men and farmers who delivered logs to the company—have, through their attorney, filed a petition in bankruptcy against the concern. If the company's affairs are settled by a referee in bankruptcy it will mean, it is represented, that the settlements at twenty-five cents on the dollar, made during the last four months, will be invalidated. It will also mean that the company's affairs will be settled by a disinterested person appointed by a judge of the United States Court, and, incidentally, that the said trustee necessarily will call upon all those stockholders who have not paid for their stock to "come through" with their money

Converted Into Body Plant.—The Griswold Motor & Body Co. has bought the former Detroit Folding Bed Co. plant at Commonwealth Avenue and the Grand Trunk Railway, and will at once begin the making there of auto bodies. Louis Smith, of Detroit, will be secretary and general manager; superintendent, Elmer E. Day, of Detroit.

Weston-Mott Company to Build New Factory.—The board of directors of the Weston-Mott Company has announced plans for the erection of another new factory, which will be devoted to the manufacture of automobile rims and hubs. It will be 500 feet long, 75 feet wide and two stories high, with basement, making a floor space of 110,000 square feet. The company is employing 1,000 men. An addition to the plant 303x165 feet is nearly completed and this, together with the new plant to be erected, will mean a total of 1,600 mechanics on the concern's payroll by October 1.

Eventful Season for Auto Manufacturing World.—The latter part of June and the fore part of July were fruitful of big events in the auto manufacturing world, with the scene laid in Detroit.

The main deal was that whereby the General Motors Co., of New York, paid $4,500,000 cash for the Cadillac Motor Car Co. That this sum represents just that amount of profit to the stockholders is the admission of W. C. Leland, secretary of the Cadillac concern. That is due to the fact that the share owners long since had paid to them in dividends more than they had put into the project.

The capital stock of the Cadillac was $1,500,000, which at $100 per share, par value, was distributed among the stockholders as follows: Wm. H. Murphy, 3,055 shares; Lem W. Bowen, 2,840 shares; Clarence A. Black, 2,840 shares; Albert E. F. White, 1,607 shares; Union Trust Co., as trustee, 1,607 shares; H. M. Leland, 1,340 shares; W. C. Leland, 1,340 shares; Everett A. Leonard, 179 shares; Ernest E. Sweet, 107 shares; Harry H. Pette, 50 shares, and Arthur C. Leonard, 35 shares.

The price received by the Cadillac concern was equivalent to $300 a share. It is said that while the General Motors Co. probably has no intention of getting into one corporation all

Digitized by Google

the companies making automobiles, if it can absorb the companies with big reputations it will do so, and those of this class who stay independent will have to hustle.

While it is denied at the offices of the Rapid Motor Co., of Pontiac, that the General Motors Co. has purchased the former's business, it is admitted that when the capital stock of the company was raised from $250,000 to $500,000 on July 20, W. C. Durant, of Flint, chairman of the General Motors Co.'s executive committee, took $200,000 of the increase. Mr. Durant says it is purely a personal investment with him and has nothing to do with the General Motors concern. Mr. Durant has engineered most of the deals where plants have been purchased by the General Motors Co. Should the General Motors Co. later on desire to obtain control of the Rapid Motor Co., the large block of stock now held by Mr. Durant might facilitate matters.

Pesident Benjamin Briscoe, while in Detroit for the start of the Glidden tour, on being asked at the Hotel Pontchartrain, whether negotiations were on for the sale of the Maxwell-Briscoe Co., as rumored, replied.

"I hardly know how to answer the question whether overtures have been made to us along that line, but it is much more likely that some company might come to the Maxwell-Briscoe, than that the Maxwell-Briscoe might be merged in any other combination. From our combined five plants we now have an annual output of 25,000 cars—much larger than any General Motors constituent company—and a number of our people are interested in other companies that could turn out 10,000 to 15,000 cars a year."

It is the general understanding in Michigan that the General Motors Co. has been "feeling out" the Maxwell-Briscoe concern without meeting much encouragement.

Mr. Durant says that next year will be the greatest the automobile business has ever known; that 200,000 autos will be manufactured, and that the General Motors Co. will make about 50,000 of this grand total at its plants. Some of the 1910 cars will begin to come out as early as October to meet the great demand. This is how the General Motors Co. will help Detroit: There will be the new factory of the Detroit-Welch car, which will turn out 1,500 seven-passenger cars, and additions will be built to the Michigan Auto Parts Co. in Delray, and to the Northway Motor & Manufacturing Co. at Maybury Grand Boulevard and the Grand Trunk Railway tracks. Mr. Durant does not presume to predict when the auto manufacturing business will find a level.

The deal second in importance to the General Motors-Cadillac merger was that consummated between the Everitt-Metzger-Flanders Co., popularly known as the "E.-M.-F.," and the DeLuxe Motor Co., at Clark and River Streets, Detroit, the Studebaker concern paying between $750,000 and $1,000,000 cash for the DeLuxe plant and business. The negotiations were extremely brief. The deal was in preparation for the output in large quantities of a new runabout. It is the intention of the E.-M.-F. Company to utilize the DeLuxe plant for the manufacture of this vehicle, which will retail for something less than $750. It will be known as the "Studebaker-Flanders 20," and the sales will be handled by the Studebaker Automobile Co. There will also be a new four-passenger runabout, to be known as the "Studebaker." The manufacture of the high-priced DeLuxe car will be continued in limited quantity. President Flanders says that the E.-M.-F. car output will be largely increased next year, plans for plant alterations and additions having been made that will permit the making of 25,000 of these cars in 1910. In the new additions everything in the way of parts that hitherto have been manufactured outside of Detroit will be made within the city limits.

Big Profits in Short Period.—Eleven months ago the E.-M.-F. Co. was incorporated with a capital of $1,000,000, of which $200,000 was paid in. In those eleven months the company has made $1,000,000 in cash profits. And it has not borrowed a dollar since its organization, but has paid out of the profits $800,000 for the plant now occupied by the company. An additional $80,000 is being invested in an enlargement of the factory, and by October 1 the total investment in its manufacturing properties will reach the million mark. The company, on October 1, will be prepared to pay in dividends a sum approximating a quarter of a million dollars.

Looked Over the Olds Power Plant.—W. C. Durant, of Flint, chairman of the General Motors Co.'s executive committee, accompanied by a number of Lansing automobile men interested in the big gasoline engine contract that the Olds Gas Power Co., of Lansing, is turning out for the former company, recently looked over the Olds plant. Mr. Durant was accompanied back to Flint by C. P. Downey and E. V. Chilson.

New Company Backed by Chalmers People.—Hugh Chalmers, president of the Chalmers-Detroit Motor Co., of Detroit, has announced the organization of the Fairview Motor Co., to be officered and financed by the officers of the Chalmers-Detroit concern. The new company will manufacture vehicles of the heavier sort and will have its factory on recently acquired land directly west of the Chalmers-Detroit plant. The factory will cost about $150,000, and taxicabs, trucks and other vehicles for commercial purposes will be manufactured. Mr. Chalmers neither affirms nor denies the rumor that his company has absorbed the E. R. Thomas Co., of Buffalo, N. Y. Mr. Thomas, however, denies it strenuously.

CARRIAGE BUILDERS WHO ARE GETTING INTO AUTO GAINS.

H. A. Moyer, Syracuse, N. Y., is preparing plans and specifications for a four-story building, 60x150 feet, to be devoted exclusively to the manufacture of automobiles. The cost of the new building will be $40,000. The car which Mr. Moyer will place on the market for 1910 sells at $2,000.

Park Carriage Co., Henderson, Ky., are having a building erected for the purpose of manufacturing automobiles. Their cars will be tested out during the next few months, and their expectation is to have a line of models on the market for the 1910 season.

Huntsville Carriage Works, Huntsville, Ala., have just completed a garage adjoining their carriage shop. This garage is 53x80 feet, and in it will be handled automobiles and automobile accessories of all kinds.

Work has been commenced on the new factory for the Hercules Buggy Co., Evansville, Ind., where motor vehicles will be manufactured. The buildings will be completed by September 1. It is expected that employment will be given to from 100 to 200 additional men from the start.

Two Moline factories are to make great improvements and enlarge their plants this summer, the Wright Buggy Body and the Sechler Carriage Companies having decided to expend money needed on additions to their shops. The Wright Carriage Body Company will build a third story 100x60 feet to their present plant for the purpose of manufacturing automobile bodies, and it is understood that they will manufacture for local auto companies.

The L. Burg Carriage Company, of Dallas City, Ill., has taken up the manufacture of automobiles and will have both touring and roadster models. The Rutenber motor will be used.

IS TAKING A VACATION.

Secretary McCullough, of the National Wagon Manufacturers' Association, is taking a vacation, the first since he assumed that position five years ago. He will visit the Yellowstone Park, the Alaska-Yukon-Pacific exposition and the trade centers of the Pacific slope.

Digitized by Google

Among the Manufacturers

Making Extensive Additions.—The H. M. Glen Wagon Works, Seneca Falls, N. Y., will make extensive additions. A building will be built four stories high and will give the firm about 20,000 feet of floor space. The structure is to have 50 feet frontage on the street and will be 100 feet deep. It will face Oak Street and is to be erected just west of the company's brick buildings. The improvements will be completed within the next two months.

Succeed the H. Kaiser & Co.—The business of H. Kaiser & Co., Inc., Twenty-third and Race Streets, Philadelphia, has been acquired by William F. Powell and Thomas K. Quirk. Mr. Powell has been with the Kaiser concern for a number of years and will attend to the office work, the buying and the financial end in general. Mr. Quirk, who has had a large experience in the wagon business, having been identified with Fulton & Walker for a long period, will superintend the construction work and the selling department.

New Company to Take Over Troy Buggy Co. Plant.—The Troy, (O.) Manufacturing Company has been incorporated with a capital of $150,000. The new company will take over the old buggy works, being practically in possession now, though the buggy works company is still in the hands of a receiver. Automobile fenders, bodies and other accessories will be manufactured. A number of Troy capitalists besides Dayton capitalists, are backing the project. The automobile manufacturing part of the plant was not purchased and it is said Mr. Stanley may go to Union City. The new concern, it is said, will employ between 200 and 300 men.

Made Sales Manager.—R. P. Henderson, who for several years past has been assistant salesmanager of Parry Manufacturing Co., Indianapolis, has been made manager of sales, succeeding Warren D. Oakes, who resigned to engage in the automobile business.

New Firm Succeeds Bettendorf Metal Wheel Co.—The firm of French & Hecht has succeeded to the business of the Bettendorf Metal Wheel Co., Davenport, Ia., and Springfield, O. The successor of the wheel company have purchased all the property of the concern and assume all contracts and liabilities. The same persons who controlled and managed the corporation will manage the partnership, both at Davenport and Springfield, and with the identical capital. As the charter of the corporation would expire in a short time, it was decided to continue the business as a partnership rather than to obtain an extension of corporate existence.

Big Government Order.—According to a Lafayette, Ind., newspaper, the Indiana Wagon Co., of that city, has received an order from the department of the Interior of the United States for 1,000 wagons. These vehicles will be apportioned to the various Indian reservations of the West and Northwest. The work was given through competitive bids, and the specifications show that nothing but the best work is desired by Uncle Sam.

Doubling Capacity.—Walkerville Carriage Goods Co., makers of dashes, fenders and carriage trimmings, Walkerville, Ont., are building an addition to their plant, and materially enlarging their equipment. These improvements will double their present capacity. The business done this year is reported to be three times as large as last year's.

York Carriage Co. Erecting an Addition.—A building permit has been granted to the York Carriage Co., York, Pa., for the erection of a two-story brick factory, which will be erected at the corner of Sherman and Hay Streets. The building will have a frontage of 50 feet.

New Wagon Company for Augusta.—The Augusta Wagon Works has opened up at No. 823-5-7 Ellis Street. The new company will build all kinds of wagons and carts, and also repair automobiles, wagons, carriages and all other work in this line. Mr. E. C. Horton is the manager.

Carriage Builder in Bankruptcy.—A voluntary petition in bankruptcy has been filed by Roderick W. Rogers, of 18 Belmont Street, Watertown, Mass., a carriage builder. His liabilities amount to $29,461.13, of which $3,683.90 is unsecured. His assets consist of real estate valued at $28,000.

Tanners Getting Busy.—L. M. Smith & Sons, Newark, N. J., tanners of carriage, furniture and automobile leathers, are erecting a two-story tan yard to give additional productive capacity.

Glide to Double Capacity.—The factory building formerly occupied by the St. Louis Motor Car Co. at Peoria, Ill., has been bought by the Bartholomew Co., which will run it in connection with the present one. This acquisition doubles the capacity of the Bartholomew Co. and will enable it to take care of its increased output for 1910.

Fifty Thousand Dollar Addition to Wagon Plant.—The Moline Wagon Company let a contract for the building of a three-story addition to the one-story building adjoining the main building on Third Avenue, Moline. The new structure will cost about $50,000 and will be of vitrified brick and reinforced concrete. The four-story structure when completed will be used as a warehouse.

Will Move to Ann Arbor.—Ann Arbor is assured of the coming of the Ferguson Carriage Works now located at Ypsilanti. The company expects to move its plant by fall.

Hub and Spoke Factory Starts Up.—The new hub and spoke factory, at Normal, Ky., which has been in course of erection and equipment, has been completed and is now in operation, giving employment to a large number of men.

The Fourth Effort Failed.—Another effort was made by H. H. Haines on July 14 to sell the Decatur Buggy Works, but no bidder appeared. This was the fourth effort to sell the property. The plant was appraised at $28,000 and none seemed to care to bid near that price at any time.

New Carriage Woodwork Co.—The Arkansas Carriage Woodwork Co., Turrell, Ark., has been incorporated by W. S. Elder, J. H. Shettleworth and W. W. Cates. Capital stock is set at $25,000.

Will Double the Force.—The Hannibal (Mo.) Wagon Co. claims to have guaranteed orders for 4,500 wagons. This number of wagons must be turned out during the coming year. Mr. Lasnier states that he will begin operating his plant day and night. He will double his force.

Erecting an Addition.—The Delker Bros. Buggy Company, of Henderson, Ky., is preparing to erect an addition to its plant, three stories, 78x80. This will enable the company to increase its capacity about one-third.

Acme Wagon Co. Improvements.—The Acme Wagon Company, of Emigsville, Pa., is building a small addition to its

Digitized by Google

blacksmith shop, and has in contemplation a large addition to the main factory building.

Buys New Plant.—At a meeting of the directors of the Elkhart (Ind.) Motor Car Company, of Elkhart, Ind., held recently, it was decided to purchase the new factory building originally erected for the Sterling-Hudson Whip Company, and use it for the manufacture of automobiles. Lack of space in the present factory seriously interferes with prompt fulfilment of orders, and with the new addition the company expects to get out 1,000 cars a year, and employ 400 men.

Sechler Plant Improvements.—The D. M. Sechler Carriage Company, of Davenport, Ia., has begun a new building for itself. It will be 64x82 feet in dimensions and will have four stories and a basement. It will cost in the neighborhood ot $15,000.

Contemplating Adding Auto Plant.—The addition of an automobile plant to their carriage factory is being contemplated by the Logan Carriage Company, of Parkersburg, W. Va., in which case they will manufacture not only touring cars and runabouts, but delivery wagons, suitable both for city merchants and market gardeners in the country.

Otto Nack Seriously Injured.—Because the brakes of his automobile refused to work Otto Nack, well known carriage builder of Mobile, Ala., was plunged down an elevator shaft at his works on July 10 and very seriously injured. Mr. Nack met with a serious accident some time ago while out hunting, a gun discharging, blowing off three of his fingers on the right hand.

Makes Voluntary Assignment.—Frank Fleckenstein, carriage and wagon manufacturer at Barbara, Wis., has filed a voluntary petition in bankruptcy. The liabilities are $1,837.26 and the assets $5,698. The manufactory is one of the oldest business establishments in Barbara.

Change Managers at Keyes Wagon Co.—Clinton W. Cheney, for many years manager of the Keyes Wagon Co., at Clinton, Mass., has resigned and is succeeded by Walter W. Wright. Mr. Cheney retains his interests as a stockholder, but severs all official connection. Mr. Wright has been associated with the company for some time forming a partnership with Mr. Cheney, before the organization of the presnt stock company, they buying out the business when Henry I. Cheney retired.

Will Handle Entire Output of Rex Buggy Company.—The Rock Island Plow Co. has closed a contract for the entire output of the Rex Buggy Co., of Connersville, Ind., and the Rex line of buggies will be handled by the Rock Island firm through its branch houses. The deal calls for the output for a year.

Ten Thousand Dollars Loss by Flood.—The Springfield (Mo.) Wagon Company suffered a $10,000 loss, on July 7, in the worst flood which ever visited the Valley of the Jordan.

Annual Picnic.—The employes of the Winona (Minn.) Carriage Company had their annual outing at Lake City on July 31. A steamer was chartered to take them to that point.

Will Erect Large Factory.—William Schaefer, St. Louis, Mo., carriage builder, has purchased the corner of Thirteenth and Cass avenue, and will erect a large factory. He purchased the lot for $13,000. The improvements are to cost in the neighborhood of $60,000.

Marshalltown Buggy Co. May Build Autos.—The Marshalltown (Ia.) Buggy Co. has purchased the old barb wire factory building in that city, located between the Northwestern and Great Western railroad tracks, and covering a ground area of approximately 200 x 240 feet, with a one-story brick factory building. The new purchase will be made the shipping department, and in addition to this the manufacturers of polls and shafts and of automobile tops. It is the expectation of the management of the buggy company that with this additional factory room they may engage in the manufacture of automobiles at an early date. In fact, President L. M. Osborne already has negotiations under way for the purchase of the manufacturing rights of a car now in successful operation.

MERGER AT AMESBURY.

Thomas W. Lane and Harlan P. Wells, two of Amesbury's well-known carriage manufacturers, have consolidated. The Wells plant has been moved from the Bailey building to the Lane factory.

This union of two of Amesbury's largest carriage concerns, says a local paper, will mean much to the carriage business of this town. Mr. Lane has the largest local trade, while Mr. Wells has sent carriages to every state in the United States. H. P. Wells has a well-known light carriage, while T. W. Lane's buggies are seen everywhere. Both these lines of carriages will be developed as the demand increases.

The Amesbury Metal Body Company will purchase the machinery of the Wells plant, and will also occupy the factory.

CHANGES IN CLASSIFICATION.

The Vehicle Shippers' Traffic Bureau, through its secretary, W. N. Agnew, has sent out the following report:

This bureau recently presented another petition to the official classification committee asking for a further concession on the length of crates in L.C.L. shipments. We had representatives at the sub committee meeting in Chicago, and ours was the only organization represented at the recent meeting in Buffalo of the special committee appointed to consider this and other matters pertaining to shipment of vehicles.

We are very glad to be able to announce that the maximum length of crates taking one and one-fourth times first-class rate has been extended to 115 inches, same to become effective with the next issue of the official classification, about October 1, 1909. This will permit any delivery wagon that is not a freak being carried at one and one-fourth times first-class rate instead of double first-class as heretofore.

The annoying rule of the present classification permitting the railroads to charge three times first-class rate for vehicles in three packages will also be changed. Where it is necessary for a delivery wagon top to be crated separately from the wagon, the job and top will each be rated according to its class. Shippers, for several years past, have been compelled to pay three times first-class rate for wagons crated in this manner, even where it was absolutely impossible to crate the wagon and top in the same package.

For the past year and a half this bureau has been giving these matters particular attention both in the official and southern territories. We have had our representatives at numerous classification meetings in New York, Chicago and elsewhere, and have been able to get low crate jobs raised from 30 in. to 34 in. and high crates from 50 in. to 54 in., and the length extended from 94 in. to 115 in.

We want to take this occasion to thank the railroads for the concessions granted and to say that we appreciate the courteous treatment that our various petitions have had.

WHEEL MAKERS MEET.

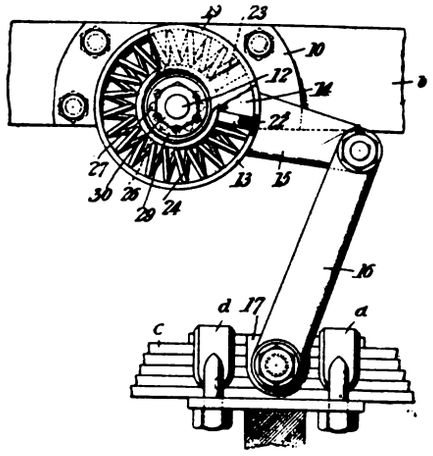
The wheel manufacturers of the country held an interesting meeting at the Country Club, Terre Haute, Ind., on July 7. More than twenty representatives were present. Jay H. Keyes entertained them at lunch at the club house and following that the different phases of the business were taken under discussion. In the evening another meeting was held at the Terre Haute House, at which the various questions were given further consideration and afterward the banquet table was the center of interest.

Digitized by Google

RECENTLY GRANTED PATENTS OF INTEREST TO AUTOMOBILE AND CARRIAGE TRADE.

Shock Absorber. Charles H. Newton, Torrington, Conn., assignor to The Standard Company, Torrington, Conn. No. 924,817. Patented June 15, 1909.

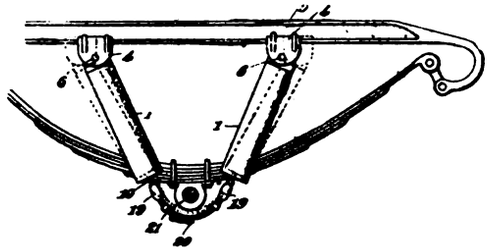
A vehicle body and running gear, in combination with a fractional support connecting them and offering uniform resistance to movement in both directions, and an auxiliary means



carried thereby and offering gradually increasing resistance to upward movement of the vehicle body from a normal position of rest.

Recoil Check. Frederick J. Mellen and Burton A. Edwards, Beloit, Wis. No. 924,913. Patented June 15, 1909.

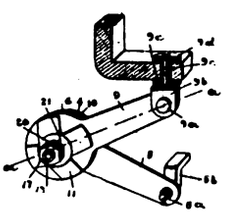
A check device comprising a cylinder provided at one end with a cap, the cap being formed with a central recessed opening designed to form a stuffing box, a piston rod operating through the opening in the cap, packing in the recessed opening and surrounding piston rod, a piston carried by the piston



rod, a washer mounted upon the piston rod and designed as a closure for the recessed opening in the cap, a spiral spring carried by the piston rod and interposed between piston and washer to retain the latter in its proper position against the cap and to hold the piston in its normal position within the chamber, and a cap or closure for the opposite end of cylinder.

Auxiliary Spring. Wallace C. Brown, Toronto, Ont., Canada. No. 925,559. Patented June 22, 1909.

Comprising two engaging parts, means whereby the engaging parts may be connected to the vehicle, expanding members for the contracting face of each engaging part with unoccupied



spaces between them and of greater dimensions than the expanding members, the expanding members of each engaging part being contained in the unoccupied spaces of the other, whereby they will have a limited movement before the expanding members of one engage with the expanding members of the other and a yielding means to hold them in contact with each other.

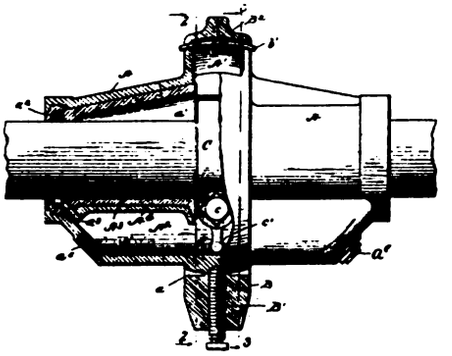
Attachment for Running Gears of Vehicles. Charles E. Abrams and Charles H. Mason, Chatham, N. Y. No. 925,740. Patented June 22, 1909.

Combination with the main and stub axles, a steering rod pivotally connected to stub axle, the upper surface of main axle having recesses near its ends, a plate seated in each of the

recesses and having its end extending beyond the axle upon opposite sides and aperture, each plate provided with an integral finger which extend toward each other, a link pivotally connected to each finger, a T-shaped clip having eyes in the rod and passing through clip, springs connecting the apertured ends of clip and links.

Self-Oiling Journal Bearing. Frank F. Landis, Waynesboro, Pa. No. 927,361. Patented July 6. 1909.

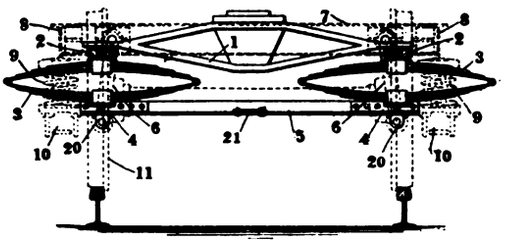
A self-oiling journal bearing comprising a casing having the bearings therein, and formed with a central opening which divides bearings, a yoke for supporting casing, a conical pin engaging a conical recess forming the engagment between the



two parts, a removable cap for the opening in casing which also serves to connect the ends of the yoke, and oil distributing means mounted upon the shaft between the two parts of the bearing.

Truck Construction. Edmund B. Dailey, Omaha, Neb., assignor to Edward H. Harriman, Arden, N. Y. No. 927,497. Patented July 13, 1909.

In truck construction, in combination, a bolster, springs upon which bolster is mounted, a spring-plank comprising a pair of angle members and means adjacent each end of members connecting them, the last-mentioned means comprising a base-portion resting between the flanges of angle members, a portion

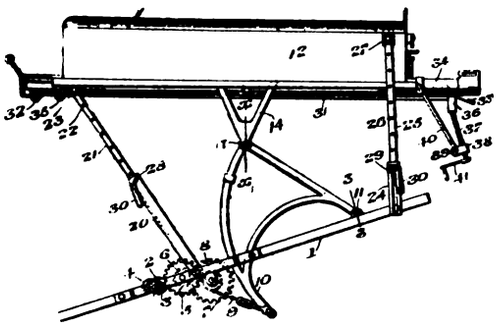


having mounted thereon one of the springs, and an intermediate web connecting the first-mentioned portions, transoms, hangers depending from the transoms at each side of the bolster and means connecting the hangers, and seated within the first-mentioned means, and additional spacing means resting upon the lower flanges of the angle members, and fitted between the remaining flanges thereof.

Digitized by Google

Dumping Wagon. William Rodenhausen, Philadelphia, Pa. No. 927,813. Patented July 13, 1909.

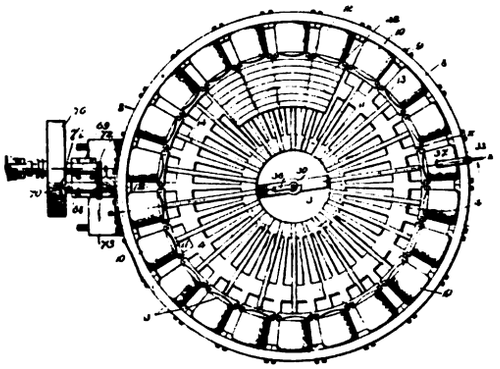
A running frame, body, hanger rigidly secured to and depending from the under side of the body, a quadrant pivotally connected with the running frame and with the hanger at a material distance from the bottom of the body and means con-



nected with the quadrant for operating the same and disposed beneath the pivot between the quadrant and hanger, whereby a short radius and easier lift are provided with a minimum length of running frame.

Tire Setter. Herbert M. Lourie, John W. Devero and John C. Ford, Keokuk, Iowa, assignors to National Machine Company, Keokuk, Iowa. No. 928,264. Patented July 20, 1909.

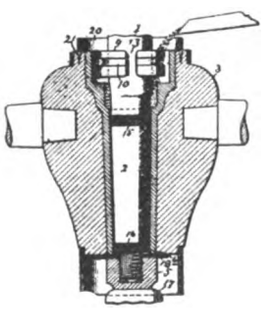
The combination with a frame or bed, of cylinders mounted



upon the frame, pistons movable in the cylinders having vertical slots in their outer ends, and keys fitting in the slots for connecting the pistons together.

Method of and Means for Repairing Axles. Albert F. Hunt, Santa Monica, Cal. No. 928,519. Patented July 20, 1909.

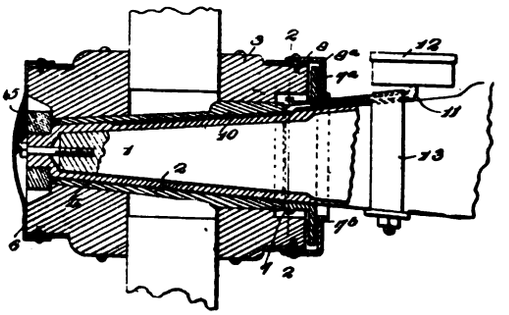
Method of repairing axles which consists in providing the spindle of the axle with a temporary dam, placing the hub of the wheel on the spindle and then filling the space between the



spindle and the hub at one side of said dam with melted metal, and allowing the metal to solidify to form a new journal surface.

Axle Lubricator and Dust Excluder. Harvey P. Hansen, Lind. Wash. No. 929,303. Patented July 27, 1909.

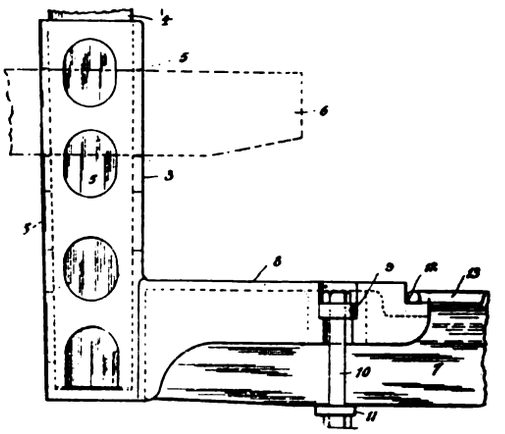
The combination o fa spindle, a wheel mounted upon the spindle, a collar applied to the spindle and formed with an outwardly extending annular flange which is provided with an annular lip, a ring carried by the wheel and formed with an inwardly extending flange overlapping the flange of the col-



lar, and a flexible ring carried by the flange and loosely engaging the lip.

Socket for Wagon Stakes. Henry W. Leverentz, Chicago, Ill. No. 929,315. Patented July 27, 1909.

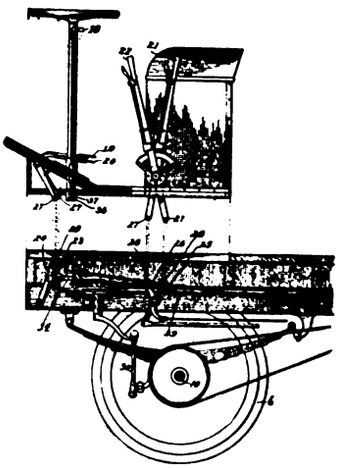
The combination of a socket for wagon stakes, having holes



in the inner and outer sides in alinement wit heach other and in the same plane as the bolster, and a stake adapted to fit closely within the holes, whereby the end may be used as a suppodt for timbers or the like.

Automobile Truck. Herbert L. Parrish, Benton Harbor, Mich. No. 924,820. Patented June 15, 1909.

A double-ended automobile vehicle having a removable frame adapted to be placed at either end of the vehicle, the frame



carrying controlling members adapted for manipulation by the driver, and duplicate operating connections at each end of the vehicle for controlling members; whereby the vehicle may be controlled from either end.

Digitized by Google

RECENTLY EXPIRED PATENTS OF INTEREST TO THE CARRIAGE INDUSTRY.

Patents Expired June 14, 1909.

476,811—Vehicle Seat. Carl Oleson, Roland, Iowa.
476,839—Holdback for Vehicles. James D. Tait, Evanston, Ill.
476,870—Tire Tightener. Robert W. Cayce, Gatesville, Texas.
476,921—Vehicle Spring. John Diehl, Racine, Wis.
476,931—Vehicle Spring. William Sharp, Allegheny, Pa.
477,065—Washer for Vehicle Axles. William Richard, Herbert G. Ogden and Edward E. Heath, Bloomville, Ohio.

Patents Expired June 21, 1909.

477,269—Vehicle Pole or Shaft. Lorenzo M. Robbins, Elizabeth, Ark.
477,316—Pneumatic Tire and Means for Inflating Same. Pardon W. Tillinghast, Providence, R. I.
477,330—Wagon Lock. William McCormick and Robert M. Patton, Otwell, Ind.
477,401—Running Gear. William Bonnar, Mono Hills, Canada.
477,419—Vehicle Spring. Adolph Jabroczky, Burnham, Chicago, Ill.
477,420—Hub-Attaching Device. Oscar Jacobi, Montreal, Canada.
477,473—Vehicle Wheel. Eli A. Thurston, Avondale, Ala.

Patents Expired June 28, 1909.

477,771—Lifting Jack. Charles Morrill, New York, N. Y.
477,775—Horse Detacher. George W. McAllister, Jake's Prairie, Mo.
477,979—Wagon Brake. James A. Whitcomb, Columbus, Neb.
478,012—Trace Supporter. John G. Miller, Champaign, Ill.

Patents Expired July 5, 1909.

478,277—Vehicle Hub. Frederick W. Fielder, Scranton, Pa.
478,287—Vehicle Hub. Alfred A. Minor, Egg Harbor, Wis.
478,349—Wagon Brake. John Miller, Velpen, Ind.
478,379—Dump Wagon Box. Frank B. Southwick, Grand Rapids, Mich.

The above lists of patents, trade marks and designs of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City.

RECENTLY GRANTED PATENTS OF INTEREST TO THE CARRIAGE INDUSTRY.

927,477—Tire. J. C. Parker, Leeds, England.
928,099—Buggy Top and Curtain. E. C. F. Becker, Milledgeville, Ga.
928,179—Body for Auto Funeral Cars. J. W. Butler, F. R. Briggs and E. H. Clark, assignors to Auto Funeral Car Company, Cleveland, Ohio.
928,110—Motor Vehicle. J. W. Davis, Middleton, assignor of one-half to J. W. McIntyre, Pocahontas, Tenn.
927,501—Locking Whip-Socket. J. T. De Moss, Thornton, assignor of one-half to J. W. Martin, Grafton, W. Va.
927,511—Spring Wheel for Vehicles. T. S. Dunn, assignor of one-half to G. Renwick, Los Angeles, Cal.
927,778—Vehicle Thill. P. E. Ebrenz, assignor to John Deere Plow Company, St. Louis, Mo.
927,787—Tire Protector. W. Green, Harvey, Ill.
927,530—Automobile Fender or Life Guard. J. A. Harris, Jr., Minneapolis, Minn.
927,793—Pneumatic Tire and Clamping Means. H. M. Hartman, assignor of one-half to O. P. Hanson, Minneapolis, Minn.
927,797—Vehicle Spring. C. C. Hayes, New York, N. Y.
928,198—Differential Axle Device. L. R. Hibbard, assignor of one-fourth to C. Benedict and one-fourth to J. H. Knapp, Los Angels, Cal.
927977—Wheel. J. J. Kelly, Crafton, Pa.
927,980—Tire Protector. C. E. Kimball, Council Bluffs, Iowa.
927,566—Reclining Seat for Automobiles. J. S. Lord, Ogden, Iowa.
927,736—Wagon Brake. J. Luznicky, Philadelphia, Pa.
927,676—Vehicle Tire, D. Pollard, Philadelphia, Pa.
928,069—Repair Device for Tires. O. C. Reich, Denver, Colo.
927,813—Dumping Wagon. W. Rodenhausen, Philadelphia, Pa.
927,687—Vehicle Wheel Rim. E. C. Shaw, assignor to B. F. Goodrich Company, Akron, Ohio.
927,886—Frame Suspender for Automobiles. E. C. Shumard, Milford, Ohio.
927,891—Vehicle Wheel. E. S. Stanclift, Berkeley, Cal.
40,142—Design, Automobile Lamp. O. J. Holt, Chelsea, Mass.
40,143—Design, Vehicle Body. W. H. Emond, Newtonville, Mass.
926,379—Attachment for Doubletrees. J. L. Alter, Remington, Ind., and C. A. Einert, Clarksville, Ark.
926,542—Draft Equalizer. J. R. Bouldin, Channing, Texas.
926,169—Dumping Wagon. A. Cameron, Jackson, Mich.
926,388—Automobile Turn-Table. W. T. Coleman, Seattle, Wash.
926,469—Attachment for Wheel Vehicles. F. D. G. Cook, Chippewa Falls, Wis.
926,176—Spring Buckle for Securing Springs to Axles. P. D. Daimler, Unterturkheim, Germany.
926,104—Tire Protector. F. H. Davis, Chicago, Ill.
926,650—Vehicle Wheel. G. C. Grable, Berwyn, assignor to Perfection Emergency Tire Company, Chicago, Ill.
926,411—Motor Vehicle. H. P. Haushalter, Milwaukee, Wis.
926,118—Folding or Collapsible Top for Automobiles. H. M. Hoelscher, Chicago, Ill.
926,590—Wagon Brake. C. W. O'Donnell, Loganton, Pa.
12,983—Reissue, Mask for Automobile Lamps. H. D. Penney, assignor of one-half to C. A. Weed, Brooklyn, N. Y.
926,604—Buggy Top Support. W. C. Putman, Saginaw, Texas.
926,439—Tire. J. C. Raymond, New York, N. Y.
926,296—Vehicle Wheel Rim. E. C. Shaw, assignor to B. F. Goodrich Company, Akron, Ohio.
926,685—Upthrow Cushion Spring for Vehicles. C. L. Thomas, assignor of one-half to F. Caulkings, Canisteo, N. Y.
926,519—Holdback Device. W. H. Thornburg, Greenville, Ill.
926,626—Wheel. C. L. Tomlinson, Portland, Ore.
927,206—Log and Lumber Wagon. J. H. Anthony, Hickman, Ark.
927,316—Whip Lock. A. B. Badtlett, Salem, W. Va.
927,322—Wheel Brake for Dump Wagons. L. Boucher, assignor to Mitchell, Lewis & Staver Co., Portland, Ore.
926,724—Dumping Wagon. J. E. Briggs, Waterloo, Iowa.
927,220—Holdback Hook. I. D. Cady, Minneapolis, Minn.
927,122—Vehicle Tire. J. G. Cramer, East Orange, N. J.
926,855—Extensible Wagon Reach. A. Davis, Washington, Ind.
926,938—Motor Vehicle. G. T. Glover, Chicago, Ill.
927,463—Motor Vehicle. A. W. Harpstrite, Moweaqua, Ill.
927,355—Tire. K. Karlstrom and G. Holmqvist, Buffalo, N. Y.
926,753—Vehicle Steering Gear. S. D. and H. T. Latty, Cleveland, Ohio.
927,254—Tire Adjuster. A. A. Long, assignor to Long & Mann Company, Rochester, N. Y.
927,256—Motor Vehicle Truck. F. Luthke, Bremen, Germany.
927,154—Resilient Wheel. W. L. Martin, Chicago, Ill.
927,259—Wheel. J. G. Maxwell, Washington, Pa.
927,276—Vehicle Gear. F. J. Paxton, Redlands, Cal.
926,769—Spring Wheel. J. E. Rielly, Newark, N. J.
927,006—Tire. C. L. Schwartz, Philadelphia, Pa.
926,830—Vehicle Wheel. J. Sinnott, Philadelphia, Pa.
927,009—Spring Wheel. J. D. Sower, Elmo, Kans.
926,834—Means for Detachably Connecting Wagon Boxes and Racks. H. S. Swan, Wanamingo, Minn.
926,969—Vehicle Tire. B. C. Swinehart, Akron, Ohio.
926,783—Vehicle Wheel. J. W. Thomson, Wham, La.
927,014—Controlling Device for Vehicles. R. Werkner, Budapest, Austria-Hungary.
926,797—Transmission Gearing for Automobiles. M. L. Williams, South Bend, Ind.

Copies of the above patents may be obtained for fifteen cents each by addressing John A. Saul, Solicitor of Patents, Fendall Building, Washington, D. C.

TO STUDY VEHICLE CONDITIONS IN WEST.

With the intention of increasing its wagon and carriage trade throughout the West, the Racine-Sattley Company has sent O. R. Gardiner, general superintendent, to Denver, Salt Lake City and other western points, where he will remain about six months studying the trade conditions and requirements in that territory. Mr. Gardiner has been in the employ of the Racine-Sattley Company for the past sixteen years, and for several years has been general superintendent. He is one of the leading experts of the country in the manufacture of wagons and carriages.

Just before departing for the West Mr. Gardiner was called into the office of Secretary G. B. Lourie, who on behalf of the department heads, who were also present, presented him with a diamond pin.

AUTOS USE UP LEATHER.

There will be 200,000 autos made in this country next year, according to the estimates of the American Motor Car Association. This will be an increase of 125 per cent over the production of cars for this year.

The rapid increase in the building and the use of automobiles is causing a large increase in the consumption of leather and rubber. Recently the price of rubber tires for autos advanced from 15 to 25 per cent.

It is commonly said that the autos are using up so much leather that they have forced up prices of leather for the shoe trade. More than 200,000 hides will be required to upholster the 200,000 cars that are to be made next year, and a great many skins will be necessary for auto equipment and clothing. This leather would be available for the shoe trade if it were not for the auto industry.

TANNING LEATHER BY HYDRODYNAMIC PRESSURE.

An improved Belgin process for tanning leather is furnished by Consul H. Abert Johnson, of Liege, the inventor claiming that it will revolutionize the industry. Hydrodynamic pressure is used, and the method has been adopted in a number of Continental factories. Those interested desire also to change the present system of selling leather by weight. The consul forwards six samples of the leather tanned by the new process. These and the full description of the method will be loaned to the American leather trade by the Bureau of Manufactures.

WORK AT 92.

Oliver A. Campbell, of Penn Yan, was 92 years old recently. He is a wagon-maker and still works at his trade every day. He was born in New Jersey, and moved to Penn Yan in April, 1838, and has since mostly resided there.

Digitized by Google

Trade News From Near and Far

NEW FIRMS AND INCORPORATIONS.

Joe Deschamps is constructing a carriage shop in Missoula, Mont.

The Brown Carriage Company has recently established itself at Fourth Street and Mendocino Avenue, Santa Rosa, Cal.

Helena, Ark., is to have a new wagon factory. Mr. Layton, of Laconia, Miss., will be the head of the new concern .

The Kingsbury (N. Y.) Carriage Co. has been incorporated; capital $3,000. John W. and James Toole are the incorporators.

Taylor Bros. is the name of a new corporation at Lynchburg, Va. Capital $10,000 to $25,000. To manufacture and deal in wagons, buggies, etc., is its purpose.

The Moline Pole & Shaft Co. has been incorporated with a capital stock of $112,500, of which $500 has been paid in at Moline, Ill. A number of Parkersburg, W. Va., people are interested, among them Ex-Governor A. B. White, John B. Finley, John M. Crawford, D. A. Beatty and G. H. Carver.

The Bunn Wagon Co., York, Pa., has been incorporated. The company is liberally capitalized and will manufacture wagons, carts, automobiles and other vehicles. The directors are L. G. Brown, J. De Haven Bunn and S. B. Meisenhelder.

J. S. Cloud is engaging in the carriage and implement business in Canton, S. D.

The Lexington Buggy Co. has been incorporated in Lexington, N. C., with a capital stock of $20,000.

The Horton Manufacturing Co. will establish a factory in Augusta, Ga., to make wagons.

The Arkansas Carriage Wood Co. has been incorporated in Turrell, Ark., with a capital of $25,000. W. S. Elder is president.

The Hare Carriage & Machine Co. has been incorporated in Webb City, Mo., with a capital stock of $5,000.

Johnson Bros will engage in the vehicle and implement business in Wausa, Neb.

B. Burton, of Salt Lake City, will open a new vehicle and implement business in Live Oak, Cal.

O. J. Doherty has engaged in the vehicle and implement business in Maple Lake, Minn.

Stephen Shultz is opening a stock of vehicles, etc., in Hastings, Neb.

Andrew Smith is engaging in the vehicle business in Satsop, Wash.

The Knock-Down Wheel Co. has been incorporated in New Orleans, La., with a capital of $100,000.

Dunkak & Maseman have engaged in the vehicle and implement business in Avoca, Neb.

L. E. Adams has engaged in the vehicle and implement business in Marshall, Minn.

BUSINESS CHANGES.

Redler & Bronson have sold out their buggy and implement business in Albion, Neb., to E. W. Stilinger.

The Davis-Hartford Mercantile Co., of Johnstown, Colo., has sold its vehicle and implement lines to F. J. Bruner.

W. A. Slater has sold out his stock of vehicles, etc., in Oxford, Kans., to J. S. Harden, of Winfield.

C. J. Weiss has sold his vehicle and implement business in Frankfort, Kans., to Johnston Bros.

A. M. Foss has been succeeded in the vehicle business by A. Wamben & Co.

C. H. Coonrod has sold out his stock of vehicles, hardware, etc., in Mahaska, Neb., to F. C Worral, of Norcature, Kans.

Jos. Primus has succeeded to the carriage and implement business of Jos. Schmidt, in Melrose, Mont.

McIntosh Bros. are succeeded in the vehicle business in Crystal, N. B., by Thomas Cameron.

Jos. E. Bogan has purchased the stock of vehicles, etc., of Geo. E. Zimmerman, in Anatone, Wash.

The H. H. Van Brunt Co., wholesale dealers in vehicles at Sioux City, Ia., have sold out to the Rock Island Plow Co.

Mr. W. R. Hunter has purchased the interest of Mr. I. J. Lamb in the Cordele (Ga.) Carriage Works.

Dunbar Bros. have bought out the carriage and wagon business of F. T. Cantrell & Sons at Spartensburg, N. C. Mr. Paul Dunbar will have control of the present wagon and carriage business of Dunbar Bros. on East Main Street, and Mr. Lee Dunbar will take charge of the business of F. T. Cantrell & Sons. One of Mr. Cantrell's sons will be associated with the Messrs. Dunbar Bros. at each place of business.

Geo. Nellson has purchased the stock of vehicles, etc., of Jacob Sieben, in Winchester, Kans.

W. E. Davey has sold his interest in the vehicle and implement firm of Hodson & Davey, in Mankato, Minn.

H. R. Coles has sold out his stock of buggies, etc., in Pawnee City, Neb., to W. M. Wagner.

Girard Workman has sold out his vehicle and implement business in Birmingham, Ia., to Stanley Kerr.

Grunwald Bros. have purchased the stock of vehicles, etc., of Peters & Buckendahl, in Pierce, Neb.

FIRES.

Fire did several hundred dollars' damage to the carriage and wagon repair shop of Thomas H. Morris at Richmond Va.

Brewster & Co., 229 West 47th Street, New York, had a fire loss which was only trifling on July 26.

The carriage shop of John Morse, at Norwood, Mass., was destroyed by fire on July 25. Loss about $2,500.

The repair shop of the F. O. Bailey Carriage Co., at Portland, Me., was destroyed by fire July 5, involving a loss of $25,000.

Fire resulting from spontaneous combustion destroyed the warehouse of the Cincinnati (O.) Carriage Manufacturing Company.

The stock of vehicles, etc., of A. J. Thompson, in Okarche, Tex., has been destroyed by fire. He carried vehicles.

The stock of vehicles, etc., of A. J. Thomson, in Okarche, Okla., has been destroyed by fire.

At Traverse City, Mich., July 26, fire caused damage to the wagon works of Caldwell & Loudon to the estimated amount of $15,000. Though the origin of the fire is unknown it is thought to have started from embers in the engine house.

The Aetna Rink, an auditorium, at Reno, Nev., covering an entire half block, burned July 26. Loss $100,000, with $27,000 insurance. Studebaker Carriage Company has just put in $35,000 worth of goods and carried but $17,000 insurance.

MISCELLANEOUS.

Frank Hull, of St. Johnsbury, Vt., has purchased the carriage shop owned by his brother, A. J. Hull at Concord, Vt.

A. J. Hartgerink is building a two-story building at Grand Rapids, Mich., which he will occupy as a buggy and harness store.

Digitized by Google

The new building of the Lauritzen Implement Co., corner H and Fresno Streets, Fresno, Cal., has just been completed.

Geo. T. Overhiser has just completed a concrete floor in the rear room of his wagon-making shop at Montgomery, N. Y., principally for painting automobiles. The room is forty feet square.

J. K. Sykes has closed out his vehicle line in Roseburg, Ore.,

O. P. Ryburg, wagon maker at Saybrook, Ill., is preparing to move to South Dakota.

When the additional story to the buggy manufacturing plant and repository of Louis Koers, at Little Rock, Ark., is completed it will have a floor space of over 40,000 square feet.

F. M. Stewart, of Buffalo Gap, S. D., is erecting a large business building to be occupied by his vehicle and implement stock.

J. Welch, an implement dealer of Geddes, S. D., has taken on a line of automobiles.

The Wallace Buggy Co., of Chattanooga, Tenn., has increased its capital stock from $25,000 to $50,000.

Carlson Bros., Beresford, S. D., have added automobiles as a side line.

Chas. E. Fowler has succeeded J. M. Schwend as manager of the Farmers' Implement & Vehicle Co., in Denton, Texas.

The Leob Carriage & Supply Co., of Montgomery, Ala., has changed its name to Loeb Hardware Co., but handles the same lines.

The Mandt Wagon Co., of Staughton, Wis., will erect a new power house, size 50x118.

EXTRA BODIES POPULAR.

Twenty-two per cent of the Pierce-Arrow Motor Car Co. orders during the past season called for extra bodies. Two bodies, one open and one closed, to be used interchangeably on the same chassis, seems to be growing in popularity. The Pierce chassis is the same for all touring, landaulet and limousine models, so that a man buying a car for delivery during the summer months can have an open touring body for the warm weather and in the fall can substitute for this a closed body. The advantages of this idea appealed to President Taft when ordering his car. He had a touring body built for his six-cylinder, 48-horse-power Pierce landaulet, and this has now replaced the enclosed body used in Washington during the inauguration.

NEW CARRIAGE WOOD CONCERN.

The Arkansas Carriage Wood Company has been chartered. The company is capitalized at $25,000, with the following incorporators: W. S. Elder, president; J. H. Shettlesworth, vice-president, and W. W. Tate, secretary-treasurer. The place of business will be at Turrell, Ark. All kinds of buggy and wagon material will be manufactured.

An Attractive Hanger.—Kokomo (Ind.) Rubber Works, Kokomo, have recently sent out a very handsome lithographed hanger advertising the Kokomo motor-cycle tires. Prominent in the design of the hanger is a Kokomo gridiron tread motor-cycle tire, which acts as a frame to an attractive picture, showing a motor-cyclist spinning along a beautiful country road, enjoying the delights of motor-cycling, safe in the conviction that his tires will stand up under the terrific strain to which they are subjected in motor-cycle use. Above the picture appears the words "Kokomo Motor-cycle Tires," and below it, the sentences, "The Product of the Oldest Manufacturer in America. Built for Service by People Who Know." The selection of colors and the general layout of this hanger are very commendable, and the whole effect is pleasing and impressive.

OBITUARY

Charles E. Morrill.

Charles E. Morrill, president of Valentine & Company, died at his Chicago home on the 2d of August.

His passing away was due to the culmination of ailments that had depressed his health for some months. His remains were laid at rest at his natal home in East Kingston, New Hampshire, on August 6. The direct surviving family consists of his son, Mr. Allan A. Morrill, and two daughters.

Mr. Morrill was a notable figure in the varnish industry of this country. By a rare coincidence it may be said he was connected with it at its inception, and his entire business life from that time forward was solely identified with the varnish industry and the affairs of the company of which he died the president.

He was a man of commanding personality, mingled with remarkable geniality of demeanor. His firmness and decision of character were so tempered by the other quality that the executive force he put into the affairs of the company were effective without harshness, producing results without friction or leaving unpleasant reminders of power.

It was these distinguishing qualities that made him one of the most remarkably successful salesman of varnish the trade has known, when his energies were directed along those lines in the beginning of his commercial career. When it became a matter of the conduct of affairs of the company of which he was the president, it was always along broad, liberal lines, mingling generosity with justness and rare business sagacity.

In his personal relations he was a most devoted man to his family, and to others helpful in full measure, with the true Christian spirit of doing good because it was good to do it. Nothing caused him more chagrin than that his many kindly acts of helpfulness should become known beyond the direct recipient of them. Humbug or false pretense were decidedly not factors in his makeup.

A brief sketch of his business career is almost the same as the history of the company of which he was the head.

In 1859 he entered into the employ of Stimson, Valentine & Co., in Boston, in the capacity of salesman with New England, then the center of the vehicle industry, as his field. Shortly thereafter the firm was changed to Valentine & Company, which it has ever since been, and the headquarters were removed to New York.

Even after Mr. Morrill's change of base to Chicago in 1878, for the purpose of broadening the scope of operations, he yet for a long time maintained his close business and personal relations with the New England builders, making frequent trips "down East."

The Lawson Varnish Company sprung from the suggestion of Mr. Morrill, and its great success in the first instance was due to his peculiar genius for the varnish business. After its merger with Valentine & Company in 1899, the Chicago office became an important manufacturing and distributing center for the company, and Mr. Morrill was chosen president in 1900, but always retaining his personal headquarters in the western city he had made his home.

In December of last year Mr. Morrill rounded out his fiftieth year of continuous service with the company, and the event was signalized by the presentation of a loving cup.

In an estimate of the work of one who has laid down the burden of life finally, it is usual to gauge everything by the yard-stick of success. Applying this test to the lift of the decedent it may honestly be said the measure was full and complete. But success may be achieved in so many and devious ways that it is sometimes better to look at the result than to scan the means of arriving at ends. It is one of Mr. Morrill's enduring and incontestable claims on the respect of the trade, and the most comforting of thoughts to his friends, that his methods

Digitized by Google

were direct, open and without blemish. The high-minded, undeviating methods of the honorable merchant always; and it is this record that constitutes his true monument, and the consideration that will keep his memory green, even after his contemporaries have gone the way he has gone.

David P. Cooper.

David P. Cooper, president of the J. A. & D. P. Cooper Co., Struthers, Ohio, and president of the Cooper Carriage Woodworking Co., St. Louis, was knocked down by a trolley car in that city July 3 and fatally injured. He was accompanied by the secretary of his company, Evan James. He was taken to the City Hospital where it was found necessary to amputate his right hand. Mr. Cooper lingered until Wednesday, July 7. His family, consisting of his wife, two sons and one daughter, were with him when he passed away. The remains were taken to his home in Struthers, Ohio, and he was laid to rest Saturday, July 10.

Mr. Cooper resided in Struthers, but made a great many trips to St. Louis in the past year. It was on one of these trips that

David P. Cooper.

he met with the accident which resulted in his death. He had left his factory in St. Louis and was on his way to his son's house for lunch.

He was born in Coitsville, Ohio, and received his early education in the public schools of that town. In lodge work he was actively interested, being a member of the local Odd Fellows Lodge. When a young man he connected himself with the Presbyterian Church, and continued a faithful member up to the time of his death. He was widely known in vehicle circles and his face was a familiar one at the conventions of the Carriage Builders' National Association, at which he was a regular attendant and a prominent exhibitor. Mr. Cooper was 56 years of age.

The factory in Struthers, Ohio, has been in operation for about twenty years. The company in St. Louis was organized last fall and only started operations in March of this year, and is managed by Mr. Cooper's son, R. M. Cooper. Mr. Cooper was a very successful business man, very popular and respected by everyone who knew him, and the community in which he resided has lost one of her best citizens.

James E. Doyle.

James E. Doyle, aged 52, at one time president of the American Carriage Company of Kalamazoo, was drowned in Klinger Lake, St. Joseph County, Mich., on July 29. He was diving and plunged into the water and did not reappear. The other members of the party thought he was trying to see how long he could stay under water and did not give him any attention for some minutes.

Then they discovered that he had not come to the surface. Forty-five minutes later the body was recovered. Efforts at resuscitation failed.

Doyle held extensive property interests in Kalamazoo, was a director in the City National Bank and treasurer of the Recreation Park Racing Association.

He issurvived by a wife, a brother, John, of Kalamazoo, and parents, also residing in Kalamazoo.

Jacob Keck.

Jacob Keck, a well-known wagon maker, 3546 K Street, Philadelphia, and a member of the Philadelphia Carriage and Wagon Builder's Association, died on July 2. Representatives of the association attended the funeral, which took place on July 5.

S. S. Shaver.

S. S. Shaver, formerly a member of the Shaver Carriage Company, passed away at his home in Des Moines, Ia., June 27. Mr. Shaver was 64 years of age and unmarried.

Charles S. Hill.

Chas. S. Hill, aged 55 years, employed as draughtsman in several of the Amesbury, Mass., carriage factories and well known in the trade, died on July 15 in that city. At the time of his death he was associated with the J. N. Leitch Co. The exact cause of death, while not clearly defined, was probably a blood clot on the brain. A wife and mother are left behind to mourn his loss.

Joseph Henry Stamets.

Joseph Henry Stamets, aged 60 years, died at his residence in Goshen, Ind., after an illness for the past eight years of diabetes. The deceased located in Goshen with his parents when a child. In 1883, with Welcome Whitaker, he founded the Goshen Buggy Top Company, at present one of the largest manufacturing and jobbing plants of this city. He leaves a wife.

Cornelius Van Horne.

Cornelius Van Horne, aged 71, formerly associated with his father in the vehicle supply business in New York City, died at his late residence, Gifford Avenue, Jersey City, N. J., July 17.

Wm. Henry Brundage.

William Henry Brundage, aged 64, retired carriage manufacturer, died July 9, at his home in Kansas City, in which city he resided since 1870. Mr. Brundage was born in New York State. Some of the earliest apparatus used by the Kansas City Fire Department was built at the manufactory that Mr. Brundage first established. His widow, a son and two grandchildren survive.

John Smoyer.

John Smoyer died suddenly at his home, Greenville, Pa., July 21, from rheumatism. Deceased had been a resident of Greenville for fifty years. He learned the carriage and wagon making business, and formed a partnership with D. C. Moyer, under the name of Moyer & smoyer. The firm enjoyed a fine business.

John W. Wolven.

John W. Wolven, messenger of the Supreme Court of Connecticut, but in former years a carriage builder at Norwich and Hartford, Conn., died June 28 at the latter city, aged 75 years. Mr. Wolven was married three times. His widow and two stepchildren survive.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

Another Good-Roads Meer.

More important than mere legislation for good roads is the work of education, the popularization of good roads by arguments and figures. The problem is such a big one that its advocates hardly know where to start. The necessities of good roads are galloping ahead of the means and willingness to build them. The automobile industry and the carriage and wagon industry would be very different from what they are if good roads were as common as bad roads. This is particularly true of the Southern States, and automobile people say their sales there are restricted by this fact. A good road invites travel. The next annual meeting of the National Association will be held at Cleveland, Ohio, September 21-23. It is said there will be a record attendance.

Tires Up.

That tire manufacturers should have resolved to put up prices in the middle of July is not to be wondered at. The imports for the past year are lighter than the year before, and the cost of the imported product greater. Notwithstanding the extension of rubber-producing areas throughout the world the demands mount up faster than the increase of the plantations. This increase will go on and rubber necessarily must advance after its recent temporary drop. According to trustworthy accounts the coming-in plantations for the next three years will considerably increase the total production, but all the world is calling for rubber, and there is not possible substitute. The manufacturers have done all they can do in the direction of making the very best product out of their stock, and they have to quite a degree compensated in excellence of service for an insufficient supply. In fact, as measured by endurance and freedom from deterioration or collapse, the tire bill costs the consumers very little more than years ago.

Watching Their Chances.

It is a half secret among some broad-minded and far-seeing automobile builders, who are at the same time carriage builders, that there are export possibilities in the auto business which will in the near future engage no small part of their energies. The export figures, especially of the last two years, indicate what there is in store. May exports this year, as against May last year, have been doubled without particularly trying. It is true Canada takes a good deal of our work, but the figures show that even European countries are calling upon American makers for increasing quantities of their light and serviceable work.

Just to what extent this business can be developed it is hard to say. Facts speak encouragingly. The moderate-priced American automobile seems to possess certain advantages which strike the European eye. The main features are price, lightness, endurance and comparative freedom from the frequent need of adjustment. American carriage builders who have smelt blood in this direction are now looking abroad and are studying out the problem of profiting by the opening European market.

Making a Field.

The makers of heavy commercial vehicles, self-propelled, have recently been turning out quite an amount of special work on vehicles designed for specific uses. Managers of some of these plants state that much of the work they are engaged upon was secured as a result of propositions made to merchants, contractors, manufacturers and builders, to provide them with power vehicles that would do their specific work better than vehicles formerly used. The builders of these vehicles have not stood on their dignity and waited for customers to come, but they went after them and proposed to do something.

The special field for power vehicles or trucks would seem to be in this direction; that is, in the designing of vehicles specially adapted to certain lines of work, to haul certain loads at given speeds, and so shaped and built as to be best fitted for the particular material or merchandise to be carried. An increasing number of such trucks is now to be seen in our large cities, and the number is bound to grow as their convenience and economy is demonstrated.

LATEST IN AUTOMOBILE HORNS.

Of the many devices invented to call the pedestrian's attention to an approaching automobile, the latest consists of an instrument that correctly imitates the bugle call. It is manipulated by the driver with his fingers by four keys, similar to those of the cornet, and of the notes required to produce the full blast.

These keys, which are located at the side of the seat, are connected with four brass tubes of varied lengths, and the latter, in turn, is joined by rubber hose to the exhaust of the engine, by which means it is operated.

When played, the imitation is perfect and reminds one of the four-in-hand coach or break with its merry party aboard, rolling along the rural highways with the bugler announcing its coming.

A device of this kind is most suitable for automobile touring parties, rather than for use in the city streets.

Another means of startling a person that may be in a lethargic state while crossing a thoroughfare is an arrangement called "The Nightingale." This contrivance expresses itself in imitation of a warbling bird and is quite popular where the automobile is much in vogue.

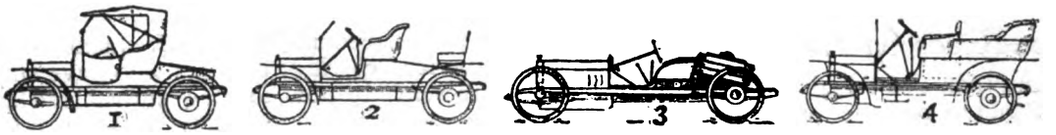
There are two or three other "scares" or "frights," as these instruments are called, besides the familiar bellowing horn, but none are so musical or pleasant to listen to as the two mentioned above.

Digitized by Google

THE VARIETIES OF MOTOR BODIES.

In the study of an art or craft it is always helpful to have some definite classification under which the several objects to be considered may be arranged. By this means the subject may be attacked systematically, an advantage which increases in value according to the breadth of the particular study in hand.

The number of kinds of vehicles which are running about our streets day by day is very great, and these varieties continue to be added to as the requirements of commerce and transportation dictate. The coming of the automobile has seen a great increase in the varieties of road vehicles during the last few years, and we propose in this article to see into what classes these new types may be conveniently arranged.



1. Two-Seated Cars or Single Phaetons.—These have a single seat in front capable of holding two persons, which may be divided or constructed as two separate bucket seats. Recent types have high wind doors, raked steering column, low driving seat, and curved dashboard. A two-seated car generally has a tool box of some description at the rear, as the room taken up by the seats is always insufficient to occupy even the most compact chassis which has to arrange for the attachment of four wheels. This rear portion is often made detachable. A two-seated car may be protected by a cape hood of waterproof twill or leather substitute, and it may also have a proper enamelled folding leather head with cloth lining. The sticks of the hood should be so arranged so as to give the best possible entrance. Canopies are seldom fixed now.

2. Three-Seated Cars.—This is a class of body which may be considered as having a main seat carrying two persons, while a further seat, either of the fixed or collapsible type, is fitted for emergencies. Usually this seat is found in the rear, and the presence of the "torpedo" or tool-box portion allows of this seat being easily stowed away.

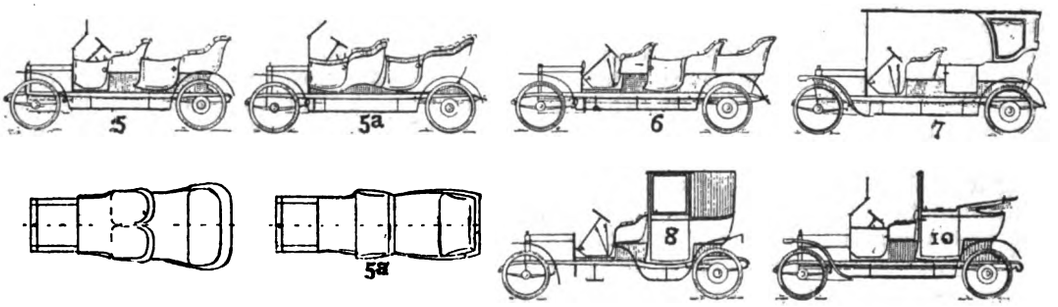
Some earlier types of cars, among which may be mentioned the Locomobile, Duryea, Benz, Decauville, De Dion, Stirling, Chaboche and Gardner-Serpollet, owing to the disposition of the engine, were able to have an extra seat facing the driving seat, making practically a vis-a-vis phaeton. The weather protection is generally restricted to the main and driving seat.

3. Racing Cars.—Closely allied to the two-seated car is the racing car, a distinction which is not so marked now owing to the racing appearance given to the body work on chassis of comparatively low horse-power. The racing body may generally be distinguished by the absence of all unessentials, and is often without any weather protection, wings, doors, steps, lamp irons, handles and other fittings. A large petrol tank, commodious spare tire accommodation, scanty painting and trimming, is usually present.

4. Tonneaux (Hind Entrance).—This was the leading type of motor in the earlier years of motoring, owing to the short wheelbases of the chassis then manufactured. The body consists of a driving seat or seats holding two persons and a rear portion, which, starting with the width at the back of the driving seat, swells out toward the rear, so that two persons are accommodated in the hind corners, and at the same time a minimum width of entrance is provided. The bodies are sometimes fitted with canopies and cape hoods folding from a single center. The hind-entrance tonneau is sometimes constructed with a removable top, having lights all round, which are fixed, sliding or folding, as the shape of the lower portion of the body prevents the glasses dropping. This type of body is practically a limousine, as will be shown later. The fixing of the top often includes a roof extension to the dashboard, where it is supported by two brass tubular stanchions.

4a. Tonneaux (Swing Front Entrance).—As a compromise to the inconvenience of stepping into the roadway to gain admission to the main portion of the body in a hind-entrance body, several were made with a swing front entrance, whereby the near-side driving seat was made to hinge with part of the side panelling. Some recent types of "torpedo" bodies are made in this way.

4b. Tonneaux (Front Entrance).—Another means of eliminating the disadvantages of the hind entrance was the adoption of the front entrance, whereby the near-side half of the driving seat hinged either inward or outward, so as to leave a free gangway to the rear portion of the body. This type of entrance is also used in some limousines, broughams, landaulettes and other types, while in a few instances, to simplify the entrance, the near-side seat is done away with.

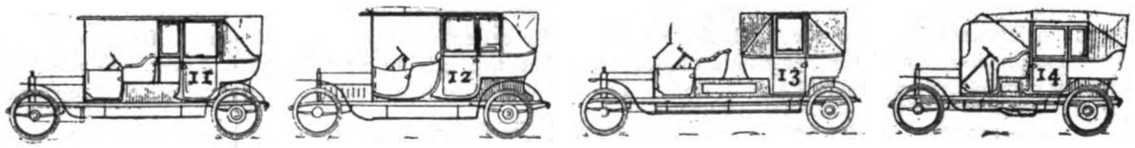


5. Thomas (Side Entrance).—The types of entrances described under Nos. 4a and 4b proved on the whole unsatisfactory, and the public demand was for a proper side entrance, as many motorists had already been used to in their horse carriages. To this end larger wheelbases were designed and the tonneau pushed further back, and a side entrance with doors constructed.

5a. Side-Entrance Phaetons.—There is no doubt that the full title for a "tonneau" is "tonneau phaeton," in the same way that a victoria is, properly speaking, a "victoria phaeton." The term phaeton has a very wide and, it must be admitted, loose application, and it seems that almost any body having a transverse seat or seats, and mounted on two axles, comes under this heading. It is generally understood now that a side-entrance phaeton is a motor body in which the rear portion accommodates two and often three persons on a hind transverse seat. Extra seats in this portion of the body, either facing forward or fixed on the front lining boards, do not alter its name, except that the term "triple phaeton" and "double phaeton" are sometimes used as mentioned later. The fact that "tonneau" is only half the title is perhaps made clearer when the horse-drawn "tonneau phaeton" is considered, which

Digitized by Google

is a term generally agreed upon by those carriage builders who have been constructing during the last year or two a side-entrance body having a tonneau shape at the rear and with an arch under the front seats to allow for the lock of the fore-carriage. Many side-entrance phaeton motor bodies are made with a continuous side sweep from the back of the driving seat, with or without round hind corners. In these instances the drop of the adjective "tonneau" is perhaps justified. The motor manufacturer's standard body is generally a side-entrance tonneau phaeton. In hind-entrance bodies step treads were sufficient, but with the adoption of side entrances platform steps have been constructing during the last year or two a side- such as electric town carriages and where six wings are used.



The side-entrance phaeton is usually provided with a double-extension head, which is erected on front and hind seats of neck plates, but is lowered from the hind centers only. Canopies are seldom seen, but leather hoods, either to the back only or both back and front, are sometimes seen, especially the former.

5b. Torpedo and Boat Bodies.—A recent type of side-entrance phaeton is that which follows much after nautical lines. As has been pointed out in recent issues of this journal, some bodies follow almost exactly the side sweep of a boat, while others are simply ordinary phaetons built low with a single shallow panel below the elbow.

6. Triple Phaetons.—The side-entrance phaeton may have folding seats fitted to the front lining boards, or if it is long enough these seats may be arranged facing forward, which, if formed into seats fastened permanently to the main side framework of the body, are sometimes known as triple phaetons.

7. Protected Phaetons.—This type of body, also called a demi-

limousine, consists of a side-entrance tonneau or phaeton body, with the rear seats protected by fixed panelling at the sides and back, provided with lights. The back one is usually fixed, while the side ones may be hinged occasionally. The roof extends to the dashboard, and a hinged frame is often fixed behind the driving seat.

The Turn-Under Pattern.—Two-seated cars and bodies of all descriptions may also be sub-divided according to the shape given to the turn-under of the seat panels. This may either be (a) the plain type, where the turn-under is effected by a straight line; (b) the rotund, where a curved line having its fulness at the bottom is used; (c) the tulip, which is the rotund shape reversed; and (d) the Roi des Belges, which is a combination of both (b) and (c) and consists of a graceful return sweep. These four patterns of turn-under are seen at their best when used with moderation, a remark which applies particularly in the case of the Roi des Belges pattern.

8. Single Broughams.—A motor single brougham body follows as near as possible lines of the horsed prototype. It should have either single or double front lights, which may drop, slide or fold, drop lights in the doors, and upper quarters panels without lights. An extension roof canopy to the dashboard may be fitted, and the description is synomous with the French term coupe.

9. Double Broughams.—There are very few motor single broughams about, and the number of these broughams constructed with a front either of the D, circular or square shape is fewer still. A few electric carriages are so constructed.

10. Single Landaulettes.—The single landaulette has a driving seat of the usual pattern, with a main body portion provided with side doors immediately following the driving seat, and must at least be fitted with a folding head so as to make the remaining part of the body open above the elbow and beyond the hind standing pillar. The single landaulette may in the larger patterns be fitted with extra seats on the front lining boards. The headwork may also be so constructed as to provide for the entire collapsing of the superstructure above the elbow line.

A single landaulette may open in the following ways:

(a) Cant rail cut close to front standing pillar and front pillar tops fixed.
(b) Cant rail lifting off a top of front pillar tops and front pillar tops to fold inward on to front fence rail.
(c) Cant rail as in (b) and front pillars to fold forward on to lamp irons.
(d) Cant rail cut as in (a) or (b) and also hinged in center so as to fold inward when down.
(e) Brougham doors used, roof fixed as far as split pillar top.
(f) A fixed front may have an extension fitted and a removable extension on separate stanchions may be fitted in other instances.

11. Double Landaulettes.—The landaulette bodies mounted on chassis generally have either a D or a square front. The circular front is seldom seen, as it detracts from the accommodation. When a D front is used, the only means of increasing the ventilation at that point is by dropping the flat center glass frame.

When a square front is used the side and front lights may drop, the front light pillar tops fall forward or inward, and the front standing pillar tops may fall forward or inward, and completely reversed inside the body. The hind standing pillar top may be hinged to the various forms of cant rail as described under single landaulettes, and the same remarks as to extension canopy applies also.

12. Limousine Landaulettes, Landaulette Limousines, Extra Side Light Landaulettes, Side Light Landaulettes, or sometimes called Double Landaulettes.—This type of body has a side light beyond the main side doors, and, according to the length of the design, it may have seats either on the front lining boards or two single seats facing forward. As regards the schemes of opening the head, it may simply fall behind the hind standing pillar, or it may further or completely collapse by folding the side light pillar tops either downward into the body or along the fence of the light, while if the front collapses the pillar tops fold across the front fence. The remarks as to extension canopies applies as given under single landaulettes. Limousine landaulettes are sometimes made with a square front.

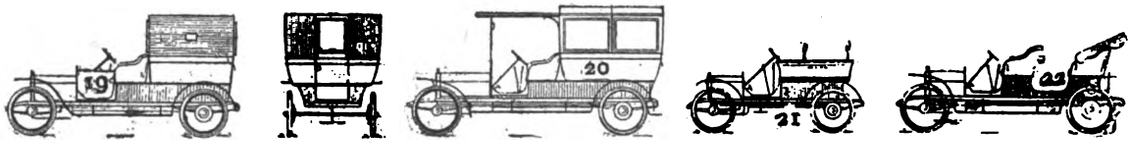
13. Landaus.—The landau body, owing to its length and the space required for the front and its headwork to fold, has been little favored as a motor body, especially when the engine is

Digitized by Google

in front of the dashboard. It has been chiefly used for electric cars and petrol chassis where the engine has been accommodated under the driving seat. A landau body, to be properly so called, must have both upper quarters to fold outward, and capable of meeting in the center over the doorway and being locked together. Where the hind leather quarter only falls the body is a double landaulette, providing there is a seat between the main doorway and the driving seat.

Broughams, landaulettes and limousines may be built with the whole of the superstructure to be lifted off bodily above the elbow line, when the remaining portion would be properly described as a side-entrance phaeton.

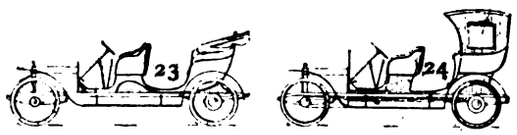
14. Landaulette Phaetons.—A recent type of body is called a landaulette phaeton. This is a side-entrance phaeton having a superstructure very much after the style of a cape cart hood, but embracing some of the solidarity of the landaulette headwork. The landaulette phaeton may be either single or double, the latter term being applied when a side light is used. The



protection capable of being all folded down from a hind center may extend over the driving seat to the dashboard. These bodies differ from the ordinary side entrance phaeton with a double extension cape cart hood in that there are pillar tops above the elbow line, and proper glass frames dropping into runs.

15. Limousines.—Although a few of the earlier limousines were made with a front and hind entrance, it may be assumed that all bodies now built have side entrances. A limousine has a side sweep in plan, but seldom of the tonneau shape, while the presence of a quarter light differentiates it from a brougham. The seating is arranged at right angles to the length of the car; if arranged parallel with the length of the car it is an omnibus. Small limousines are also known as coupe limousines, while the larger types seating up to nine in the body with a corridor entrance to the driving seat are known variously as saloons and Pullmans. The term "Berline" is generally restricted to a large limousine having lights all round the body above the elbow. Limousines are sometimes built with a square or D front.

16. Enclosed Cars (Single).—This is a class of motor body where the driving seat is entirely enclosed, and follows after the style of a posting vehicle. An extra seat may be arranged



behind, generally to fold into a torpedo back and usually unprotected. The superstructure may be of the brougham, limousine or landaulette type.

17. Enclosed Cars (Double).—This is a class of motor body where a limousine or landaulette proper has the driving portion enclosed as well.

18. Wagonettes.—This type of body should have longitudinal seats placed vis-a-vis in the main portion of the body and usually with a hind entrance, although some varieties have side doors as well. A shooting brake is a wagonette provided with game and gun racks and accommodation for ammunition. A luggage brake, or estate wagon, is often a wagonette with the seats made to fold flat against the side of the body and the hind entrance provided with double doors.

19. Lonsdale Wagonettes.—The Lonsdale wagonette is practically a wide landau body turned at right angles to the driving seat. Strictly speaking it is, of course, a landau.

20. Private Omnibuses.—This is a body as described under No. 18, provided with a solid top, suitably glazed, which may be made removable if required, so as to form a wagonette.

21. Dog Cart Phaeton.—This type of body where the character of a road or self-driving phaeton of the horse type is preserved is seldom seen now. Several dos-a-dos phaetons were mounted on Weston, Panhard, Locomobile, Stirling and Clarkson chassis, but these phaetons, now somewhat after a four-wheeled ralli car but with the hind seat facing forward, are a type which seems to be favored only in the "Jackson" car. The stanhope and demi-mail phaeton body was also adapted to chassis in earlier types.

22. Double Phaetons.—The double phaeton is practically a side-entrance phaeton without doors, and the hind seat should be more or less a repetition of the driving seat. The term "surrey" is an American equivalent.

23. Victorias.—The victoria phaeton, or victoria as it is usually called, follows closely the lines of the horsed vehicle except that the driving seat is much lower. When fitted with side doors this body is then best called a side-entrance phaeton. Some electric victorias were fitted with hind driving rumbles, which were mounted high enough to give a proper view of the roadway in front.

24. Hansoms.—The hansom cab style of body has been used in a private capacity, and the driving seat has been placed, as in victorias, both in front and at the rear.

EXPERIMENTING TO OBTAIN QUIET MOTORS.

The engineers of the Association of Licensed Automobile Manufacturers have done a great deal of study and experimentation in the line of designing quiet-running motors, and have met with considerable success. One of the subjects of their experiments was the two-to-one gear set which is necessary on every four-cycle motor, which they found was a prolific source of noise.

Although the two-to-one gears do not at first glance seem to offer any designing difficulties, there are nevertheless some very important factors to be considered. Chief of these is the uneven or intermittent load due to the lifting action of the cams, causing intermittent and even reverse pressures on the gear teeth. To ameloriate this condition there must be considered the weight of the valve mechanism, the proper tension of the valve springs, the shaping of the cams to give smooth action to the valve plungers, and the proper pitch and lubrication of the gears and the permissible amount of back lash.

Some of the structural difficulties encountered are inaccurate machine work on the crankcase, causing variation in the distance between gear centers; unsuitable crankshaft and camshaft bearings, allowing the shafts to "jump" when the motor is running, and improper cutting of the gears themselves, causing them to warp after the strain of cutting the teeth is removed.

The principal cause of noise in the valves themselves is the too sudden impact of the valve on its seat. The descent of the valve should be arrested just before it strikes the seat, either by a slight rise in the cam or by a very gradual taper. The valve spring should be of sufficient strength to keep the roller in contact with cam. One leading experimenter says that with proper design the sound produced by the seating of the valve should not be heard at all with the manifolds in place and connected. The weight of valve for the best results is also an important consideration, and much may be accomplished by the suitable use of non-resonant material.

As for the rest of the motor, noise from pistons, connecting rods and crankshafts has been practically eliminated by proper design and accurate machine work, and proper lubrication and clearance.

Digitized by Google

DISCUSSION ON MR. W. R. COOPER'S PAPER ON DUST.

(Given in last issue.)

The writer has had the opportunity of making a long journey, during dusty weather, through a country where the roads were dotted over with scattered leaves. The speeds up to 60 km. per hour, and the type of car (a large limousine) were favorable to observing the formation of dust. For mile after mile one could sit looking through the back window and observing the behavior of the air behind the car. The dust and leaves on the ground immediately at the back of the car and for a distance of some 12 feet down the center of the car's wake were quite as stationary as the heavy stones on the road, save only the low-lying feathers of dust immediately behind each of the wheels. The road surface was quite clearly visible within this distance. About two and a half yards back of the car the lighter dust particles at the sides of the road could be seen starting to move, not in the direction of the car, but at right angles to it, toward the center line of the wake (Fig. 1). At four yards back these leaves and other leaves already in the

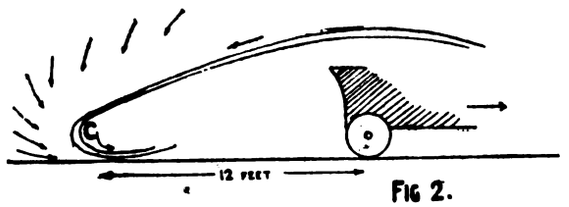


FIG 2.

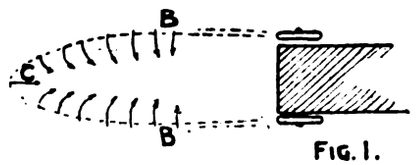


FIG. 1.

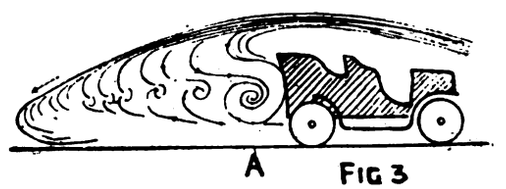


FIG 3

center line, together with much dust and pieces of dry manure of about the size of walnuts, appeared suddenly to start into movement as if to overtake the car, then to flag and shortly to be lost in the dust bank which stood over the point 12 feet back.

As far as one could tell, the condition of the air behind the car remained permanently as described above, and the air which had been forced upward over the bonnet and roof and sideways expanded into position again behind the car as it traveled forward. The air from the top, which curled round at about 12 feet back, swept along the road and rushed forward at the observer, thereby tending to fill the vacuous space behind the car (Fig. 2).

Beyond making the sketches (Figs. 1 and 2) to represent a rude guess at the movement of the streams of air, it was not then possible to go from the slender data. Mr. W. R. Cooper's investigations, however, carry us a stage further, and the somewhat unpromising group of arrows drawn by him at the back of his car can be shown to fall in with a curve which imitates an S occurring close up to the back of the car in Fig. 3.

His series of arrows seem to indicate quite definitely the position of the first vortex A (Fig. 3) about two feet behind the chassis. This vortex would presumably follow the car a little way at a decreasing speed, and as it lagged behind it would expand and catch up the feather of dust raised by the road wheels, because this feather is thrown inwards by the arrow marked B in Fig. 1. In this way the vaguely turbulent dust cloud which stood over C at a distance of 12 feet from the car would be fed and maintained.

Mr. Cooper's investigations raise the vague hope that it may be possible to throw air into the vacuous space at the back of the car by deflecting planes at the sides or top in such a manner as to raise its pressure to the normal without any air being supplied from the road level, and I should like his opinion on this. The three feet tailboard suggested by Mr. Cooper, certainly seems to be good, and it would be interesting to test its effect by dust photographs in the usual way. On the whole the writer's experience is that a chassis fitted with a two-seater body having a long tailboard behind the hood, is appreciably less dusty than the corresponding four-seater car on the same chassis.

MUST HIGHER PRICES COME.

A mere perusal of the latest market reports concerning the rubber trade will lead to the conclusion that the question which serves as a heading for this article is almost superfluous. Other similar reports will undoubtedly follow, and the rubber trade will have to prepare for a period of unrest, marked by a sharp struggle for the establishment of higher prices for rubber goods. Such contests, moreover, will be unavoidable, since present conditions leave no other available expedient to rubber manufacturers than that of adjusting their prices to the advance in the cost of the crude material, unless they are satisfied to manufacture at a considerable loss, or are willing to make materially inferior grades of goods. Even those who in the earlier part of the current year were in a position to fall back on a supply of rubber purchased at lower prices are now compelled to follow suit by advancing their prices, because all hope of seeing the market decline below present figures has not only disappeared, but there are even indications that further advances may be expected.

An event which was considered impossible even as late as the end of last year—viz: a quotation of 6 shillings on fine Para—has nevertheless become a fact, and prices are showing a tendency to advance still further. The market labors throughout under a great excitement, manufacturers are not in a position to hold back and wait, and there is a constant demand, since purchases for several months past generally have been restricted to the covering of immediate requirements. These conditions readily explain the fact that the market for all medium grades was likewise much stronger, and that present quotations on the same show even a greater advance than those in the leading grades, good quality African lots having been sold at higher prices than ever before.

In view of this enormous advance, the equal of which has been witnessed in the rubber industry only once before, there is evidently no other available expedient than that of adjusting the prices of manufactured goods, at least to some extent, to prevailing conditions. There is no other way out of the difficulty, and although the managers of many manufacturing concerns may be averse to such a measure, and dealers may find it difficult to be certain that it is absolutely necessary, it is a fact that the prices of rubber goods must be advanced by common consent.

The advance in the rubber market has already continued for more than six months, and every expectation that there would be a break has been foiled. The cost of crude material was constantly increased, and as early as December of last year an advance in prices of goods was unanimously decided on, but only partially carried out, the belief in a weakening of the market being too strong, at that time. At present, however, it would

Digitized by Google

be difficult indeed to find any one not convinced that it would be simply impossible to maintain former prices for rubber goods. An advance in prices is unavoidable, whether it be the result of joint action on the part of the manufacturers, or whether manufacturers raise their quotations as far as necessary, according to their individual position, and the sooner such an advance is carried into effect, the better will it safeguard the manufacturers against loss.

Our industry has once before found itself in the same position during a similar advance of the market which occurred a few years ago. At that time the manufacturers met prevailing conditions by advancing their prices thrice, each time by 10 per cent in accordance with the continued advance in the rubber market. The present situation, however, is more serious. This time the advance was more rapid and abrupt than a few years past, and especially the medium grades, to which manufacturers were wont to have recourse to a certain extent at least, were much more rapidly affected by the present advance. There is at present no possibility of avoiding the issue, and crude rubber, including even the inferior grades, must now be purchased at an advance of from 40 per cent to 60 per cent above last year's prices.

This enormous increase in the cost of the most important crude material within one year, is made still more serious by unfavorable general business conditions which make it difficult for manufacturers to find an outlet for their products both at home and through export channels. But notwithstanding prevailing conditions, or rather in consequence of the same, it has now become necessary to take, with the greatest determination, the step which alone can safeguard the rubber goods manufacturers against heavy losses, and the trade against serious injury. The prices of rubber goods of every description must be materially advanced! They must be advanced sufficiently to maintain established standards of quality and to make it possible to do business with a margin of profit. The contentions which will result from the taking of this necessary step—and they will most certainly occur—are an unavoidable feature in the strife to insure the future of our industry under wholesome conditions. No one can avoid them, because the conditions of the market compels every one to take action.—From the Gummi-Zeitung, Berlin, June 25.

AMONG THE TIRE MAKERS.

The Ohio Tire Company, with a capital stock of $10,000, has been incorporated under the Ohio laws by Thomas Midgley, B. G. Huntington, Louis Fink, J. A. Pfeifer and M. E. Murphy. Mr. Midgley is general manager of the Midgley Manufacturing Co., of Columbus, which manufactures the Midgley automobile wheel. The new company will locate a factory in Columbus for the manufacture of a tire which is said to embody many improvements.

All the rubber tire plants are making additions to their plants this year.

Frank R. Tate has resigned as manager of the St. Louis branch of the B. F. Goodrich Company to enter the automobile business.

The Goodyear Tire & Rubber Co. has begun work adding two more stories to its office building. The plant was recently enlarged.

The Falls Rubber Co., recently organized in Cuyahoga Falls, Ohio, has purchased the rights of manufacture of a patent rubber horseshoe pad. A line of automobile tires will also be among the products of the new concern. H. A. Post, formerly of Buffalo and Denver, will be sales manager. On account of his removal to Toledo, J. N. Weid leaves active participation in the company and the officers have been changed to the following: Dr. S. H. Sturgeon, Akron, president; W. G. Short, Akron, vice-president; H. F. Siegrist, Akron, secretary and treasurer; William Sherbondy, Akron, superintendent. The offices will be located in Akron. The new plant in Cuyahoga Falls is under roof.

Akron manufacturers confirm the announcement of an increase of 15 per cent in the price of tires, but no complete price lists have been made public yet. Dealers have received new quotations, going into effect after July 16. The manufacturers say that a year ago the price of crude rubber such as was used in tires was less than $1 a pound, whereas, now it is $1.50, so that a raise in the price of the finished product is fully justified. The increase in the price of rubber was sudden, because the general depression kept the demand low; but when the demand again became brisk the price went up with a bound.

Tire makers are awaiting action of the Motor and Accessories Manufacturers' Association before taking steps to be represented at the opening show of the season in Atlanta, Ga., November 6-13. It is expected that the association will approve the show. It will be one of the large automobile events of the year.

BLUE MOST POPULAR AUTOMOBILE COLOR.

Dealers in Pierce Arrow cars have been supplied recently with samples of thirty-two colors that will be used in finishing cars of that make in 1910. Incidentally, the list of colors gives a very good idea of what the buyers of high grade automobiles favor in the decoration of their cars. The color schemes used for 1910 are chosen from among the most popular shades used on the 1909 cars.

Some surprises would be in store, doubtless, for the man who was asked offhand to name the shades chosen most often. A table just prepared at the Pierce plant shows that red ran a poor fourth in the season's output. For purposes of comparison the various shades of different colors were not taken into account. The comparison shows that the colors ranked as follows: Blue, 26.57 per cent.; green, 25.03; wine, 21.14; red, 10.88; brown, 6.66; gray, 4.60; black, 1.75; white, 0.31. In addition 2.88 per cent. of all the orders received were for chassis to be given simply a lead coat.

Although blue leads in this list the fact is due to its being the most popular in the smaller powered cars. Last season cars of five horsepower were made, 24, 36, 40, 48 and 60. It was in the 24, 36 and 40 horsepower cars that blue predominated. In the larger cars, the 40, 48 and 60 horsepower, green prevailed to as great an extent as blue in the smaller lines.

Wine color was a consistent third and it has proved so for several seasons. It might be held that wine color bordered so closely on red that it could be classed as that, but the wine color used on Pierce Arrows is so dark as to make the distinction very plain. In the preparation of the thirty-two colors to be shown this season leathers of all finish and colors to the number of over sixty have been obtained to match.

THE 1910 AUTO SHOWS.

The Tenth National Automobile Show, at Madison Square Garden, will probably be held January 8 to 15, 1910. This is the show which is under the auspices of the Association of Licensed Automobile Manufacturers.

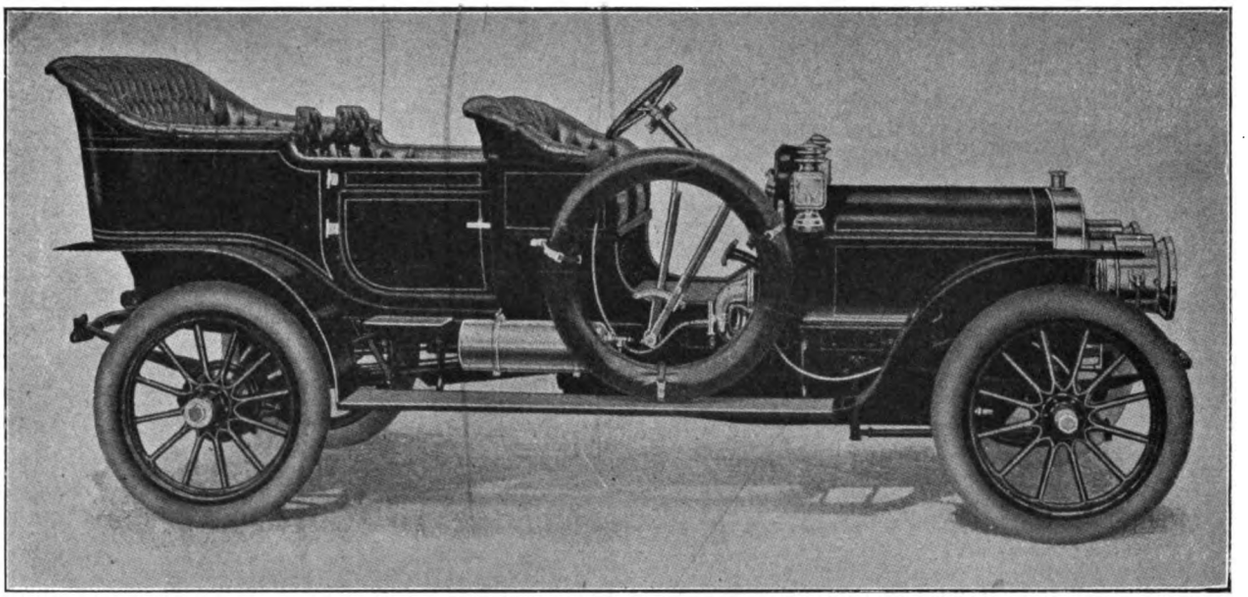
The American Motor Car Manufacturers' Association will hold its Tenth International Automobile Show December 31, 1909, to January 7, 1910.

NEW STUDEBAKER CORPORATION.

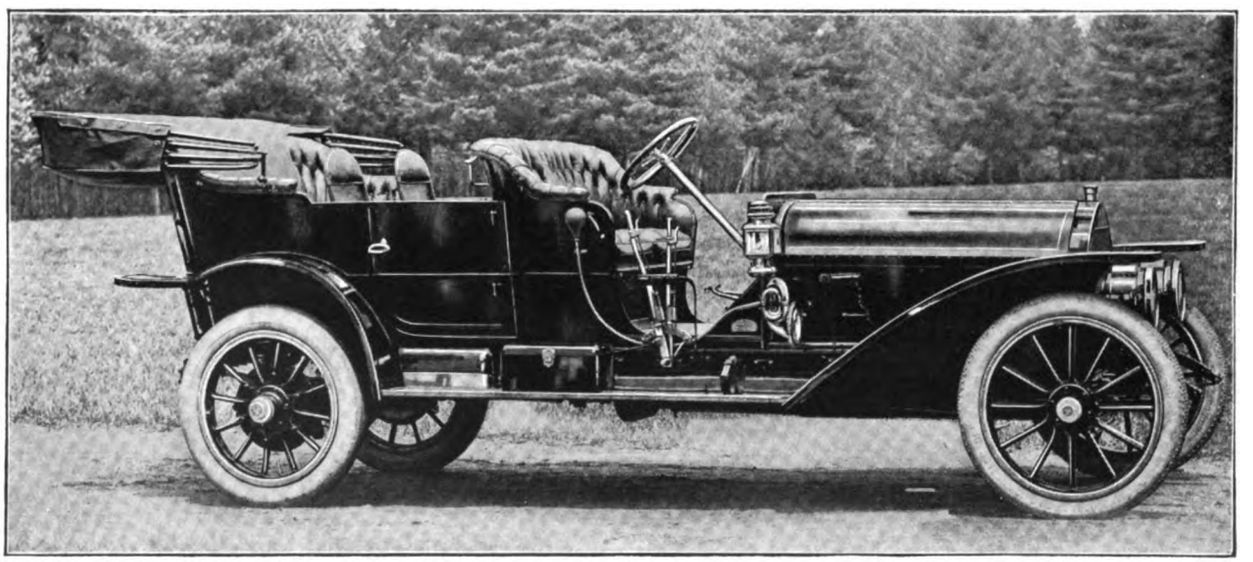
The Studebaker house at Indianapolis, Ind., has been incorporated under the name of the Studebaker Bros. Company of Indianapolis with a capital stock of $40,000. The incorporators are Frank Staley, Frederick S. Fish, Clement Studebaker, Jr., Nelson F. Riley and Scott Brown.

Digitized by Google

Illustrated Automobile Section, August, 1909.

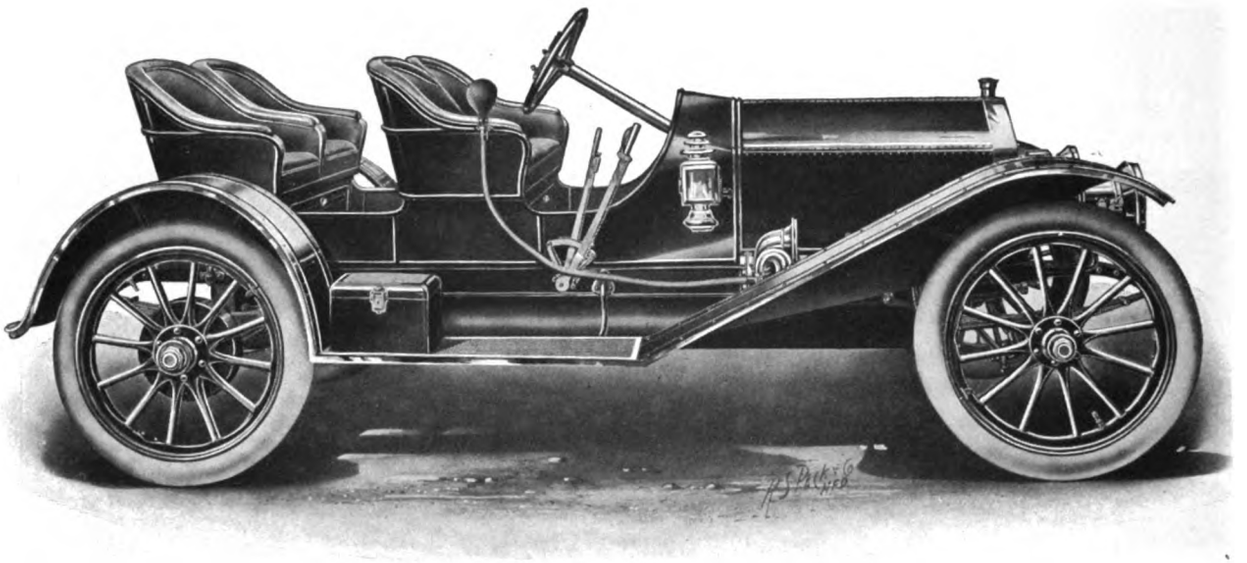


SEVEN-PASSENGER CAR—1910 MODEL.
Built by Johnson Service Co., Milwaukee, Wis.



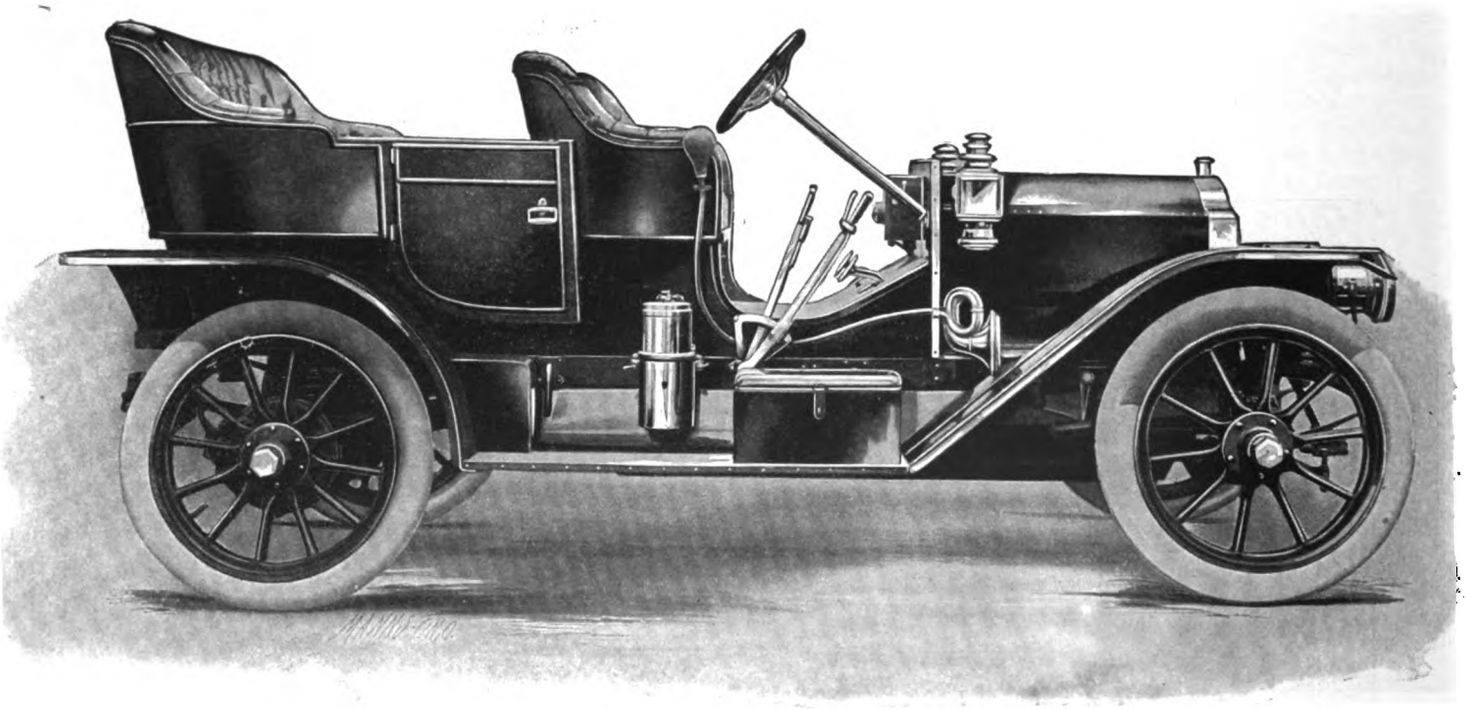
SIX-CLYINDER, 40-H.P., MODEL Y, CAR.
Built by Stevens-Duryea Co., Chicopee Falls, Mass.

Digitized by Google



McCUE 1910 ROADSTER.

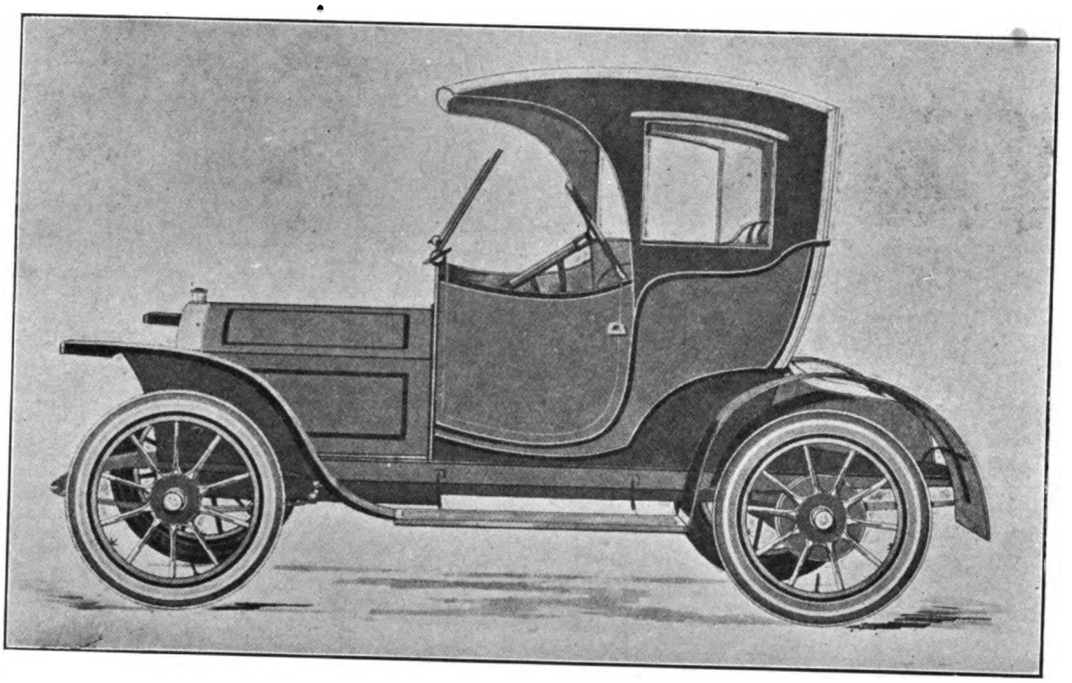
Built by The McCue Company, Hartford, Conn.



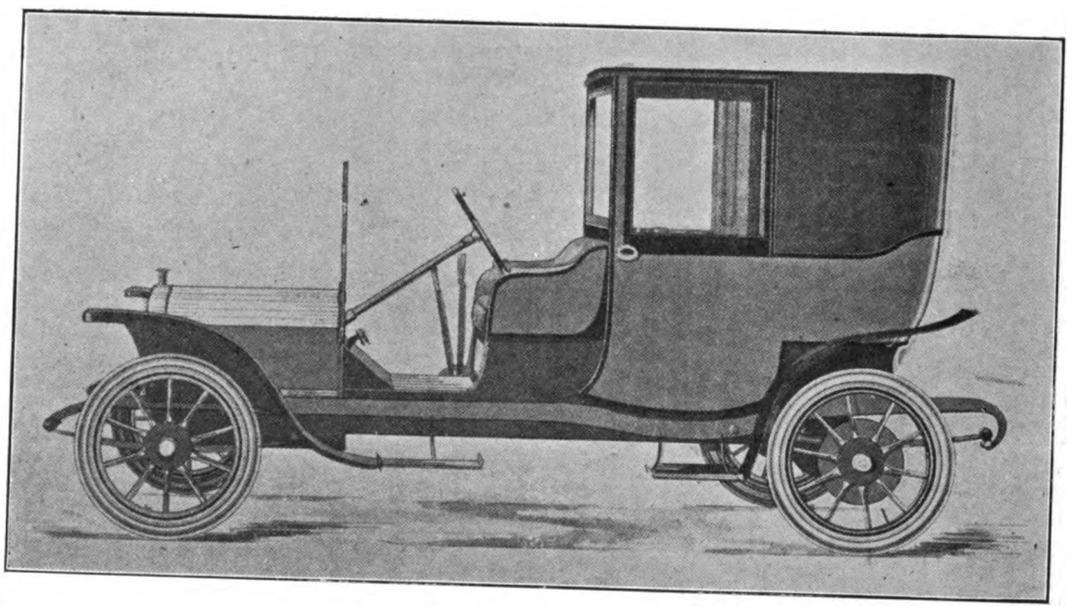
OHIO MODEL 40—FIVE-PASSENGER TOURING CAR.

Built by The Jewel Carriage Co., Cincinnati, Ohio.

Digitized by Google



PROTECTED TWO-SEATED CAR.

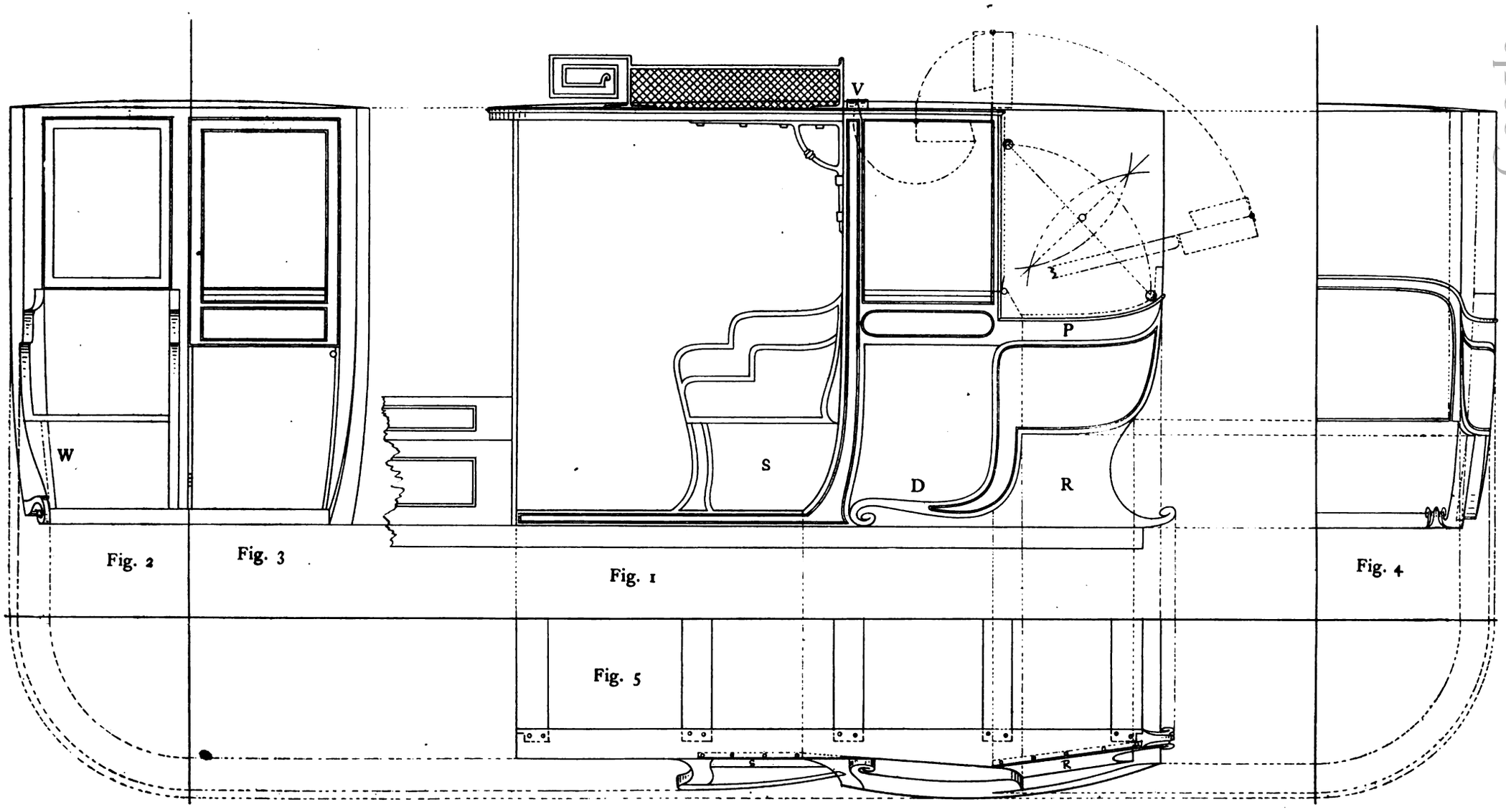


MOTOR BROUGHAM.

Two Special Designs of Foreign Cars

—Automobile and Carriage Builders' Journal.

Digitized by Google



WORKING DRAFT OF FRONT ENTRANCE LANDAULETTE BODY.

Described on opposite page.

Digitized by Google

Body Construction and Finish

WORKING DRAFT OF FRONT ENTRANCE MOTOR LANDAULETTE BODY.

(Drawing on opposite page.)

In the working draft herewith an improved design of motor landaulette has been evolved, the entrance to the car being by the front the side of the body is thus left unrestricted in its outline. An originality in design is therefore suggested to the designer by the altered construction of the body from the generally accepted methods of side entrance obtaining in limousine and landaulette bodies.

The surfaces of the body's side being unhampered with a door and its concommitants, there are spacings offered for the portrayal of original lines.

The hind quarter of the body herewith is fashioned on lines giving an upright firmness, as well as a flowing tenderness as they run top and bottom to meet the heel of the coupe pillar. The corner pillar line flows into the bottomside curve with a firm faintness, while the bottom of pillar to which the bottomside is framed is also fashioned to harmonize, and runs in with an easy flow to the scroll end, finishing at the coupe pillar. The inside line of the quarter is of course made to harmonize, and is carried up to a quickened corner running into the elbow line, and again to an upright curve at the elbow corner, thus blending the quarter outline in a pleasing harmony.

The elbow is belt panelled at P, to which the head leather is tack nailed, and the plated bead fixed as shown. The waist rail of the sham door is framed into the coupe pillar and the hinge pillar, which is got out wide enough for the front moulding lines to be formed, and jointed to a shoot bottomside to complete the outline to the scroll point. The sham door panel D is gigger grooved into the moulding line of the hinge pillar and the coupe pillar and waist rail, while the quarter panel is, of course, also gigger grooved, and the mouldings worked up in the solid. The waist rail is box panelled down and worked up with round corners. The coupe pillar is designed to meet the constructional draft of the body, as well as to harmonize with its outline. The head is made in folding flaps, as explained in the elevation, and the angle of the prop when the head is down is shown in chain lines. The flap of the head when in position is jointed on to the coupe pillar, the slat joint being protected with the Valen plate V. The hind rocker boot is solid sided, as is also the front boot, both of which are half check framed to the bottomside, as shown in the plan, Fig. 5. The chauffeur's seat can be made in solid top quarter sides, and the moulding planted on to design and the pillar filling up piece fitted to the sides projection. Or the seat can be framed and panelled in top side quarters singly and finished with side filling up pillar piece. The seat is made individually, as in Fig. 2, for the chauffeur's use, and is finished on the inside in plain panellin, that is, the N. side. The boot of the seat can be utilized for the storage of tools and light accessories.

The front entrance to the body is shown in Fig. 3. The door is made in full limousine fashion, and is hinged to the center pillar of the body and opens towards the chauffeur's seat, thus giving the whole of the entrance space free to the access and egress of the body. The door it fitted with spring lever lock, and ordinary brass butt hinges are used in the hanging.

A front entrance, as worked out in the working drawing, admits of a greater seating space in the inside of the body being obtainable, and as a means of entrance is an improvement upon the many forms of side entrance bodies in motor carriage design.

The canopy is made removable, and for this purpose a corner plate with strut stay is fitted to it. The foot taking the coupe pillar is forged to fit into square sockets forged into a light plate, which is let in level with the pillar and fixed with screws. When the canopy is dropped into its place through the socket irons, inside head locks are used to hold the head and canopy slats together. The weight of the canopy is quite sufficient to hold it to its place in the sockets without any other fixing. The front of the canopy is fixed to the front wind screen standards. To have a portable canopy fitted to a landaulette has some advantages, because when the car is only used for visiting purposes, a permanent luggage canopy is so much extra dead weight to carry, while with the canopy off, the lightness and elegance of a landaulette is fully to view and usable in this way.

Whether the car is used with the canopy on or off, a perfect carriage is obtainable, which is not always comfortable in carriages of conversion.

The top of the body on the canopy and roof flap joint is framed with cross bar independently of the canopy and head flap. The cross bar lining off by the top of the door, as in Fig. 2 and Fig. 3. The glass lights, both in door and over the chauffeur's seat, are made to work up and down.

Fig. 4 shows the design of the back of the body in the moulding strengths, and the lines of the back panel and top of elbow cross rail for the line of the plated bead. While the widths of the body can be ascertained by cross measurement, also the line of the solid side to the pillar and its contracted position to the back.

Fig. 5 shows the half plan of the body's construction from the extreme turnunder line, and projecting thickness of the scroll bottomside from the boot and sham door line, also the position of the boot sides to the framing.

The design of this body neeessitates a construction quite different to the limousine with side entrance, or the ordinary landaulette. It is in departures of this character where an elastic and individual experience tells with power, because it is at home in dealing with design lifted from the beaten track, and can formulate a line of construction quite as original as the design itself, and free from that concrete rigidity which is such a hinderance to progressive carriage manufacture.

The boot rocker R is let in level with the bottomside and scroll pillar, as shown in the half back section, Fig. 4, and in the plan, Fig. 5, thus a level line on the inside framing without encroaching upon the width of the seat between pillars is obtained. A light body plate can be fixed round the scroll pillar and seat bottomside, with cross foot to take the seat cross bar behind. The body plate need not be more than 5-16 in. thick and 3 in. wide, and fixed with screws.

The front boot side rocker S is let into the chariot pillar, as at W in the front half section, Fig. 2, and groove boxed into the top of the bottomside, and screwed up from underneath, as shown in the plan at S, Fig. 5.

This body is constructively a departure from the ordinary limousine, while its design is a bold step in advance of the prevailing style of this popular motor carriage, because it embodies the close exclusiveness of the limousine and the free openness of the landaulette.

The front entrance design possesses points of useful and artistic attraction, that ought to make it very popular if handled by those having a keen edge for coming things to the displacement of those that obtain; and in this the design of car herewith can safely count upon a good share of patronage from the motor carriage buying community.

The sizes are: Length of body on chassis over scroll eye,

Digitized by Google

7 ft. 8 in.; length of body on elbow line over front pillar, 3 ft. 8½ in.; width of chauffeur's seat horizontally from body pillar, 21 in.; depth of boot side, S, over bottomside to underneath seat, 14½ in.; depth of seat quarter over all to top of elbow point, 18 in.; at front of same at center of curve, 15 in.; length of elbow on first tier, 15 in.; depth of quarter on front tier over all, 11 in.; length of short elbow, 8 in.; length of elbow moulding on second tier, 13 in.; depth on elbow line, 12 in.; length of short elbow on same, 10 in.; depth of same, 6½ in.; length of side on bottom from front of pillar to front of side on top of bottomside line, 18 in.; length of bottomside in front of filling up piece, 21½ in.; length of back body quarter from elbow to front of pillar, 23 in.; width of sham door between the mouldings on waist rail line, 18 in.; width of front pillar on waist rail line over mouldings, 3½ in.; full depth of waist rail, 6½ in.; depth of elbow panel over moulding and plated head line, 4 in. The elbow framing should be ½ in. deeper than this, to allow for tacking the head leather on. Width between front pillar and head prop for glass light, 17¾ in.; depth of same from top of fence rail to underneath head flap, 23½ in.; thickness of flap pieces, 2 in.; rise on roof horizontally, 1 in.; and cross ways, 1 in.; width of top hind quarter, 24 in.; depth of same from bottom of metal bead line to roof line, 29½ in. The development of the head is shown and its angle when down, also the central points of the head joints and the knuckle center.

Length of portable canopy from front pillar, 4 ft. 1 in. Depth of hind body quarter over mouldings, 13 in.; width of pillar quarter at bottomside point over mouldings, 4 in.; length of scroll bottomside from pillar line to scroll eye, 24 in.; width of front pillar at heel on scroll eye, 8 in.

Depth of hind rocker side, R, 13 in., which is finished on the bottomside line shown on the plan; length of side from scroll eye to joint, 26½ in.

Width of back of body at elbow points, 40 in.; width over pillars on head prop line, 50 in.; across front pillars, 46 in.; width of door, 21 in.; width of chauffeur's seat over all, 21 in.; across top of elbow points, 20½ in.; across front pillar points, 22 in.; width of door glass frame between pillars, 17 in.; size of light in line with chauffeur's seat, 15 in. by 20½ in.; depth of waist rail on door, 8 in.; width of body on chassis, 40 in.; width on inside seat between pillars, 42 in.; height from top of seat to underneath roof and head slats, 42 in. Fig. 1, elevation; Fig. 2, half front with chauffeur's seat; Fig. 3, half front, showing door and face front of pillar. These sections also give the full width of front and the full width across the widest part of body. Fig. 4 shows the half back view. Fig. 5 shows the half plan of body and the construction lines.

A KITCHEN IN WOODS.

G. L. Reeves, of Columbus, Ind., is having the Fehring Carriage Company of that city construct for him a vehicle which he calls a "kitchen in the woods." The new vehicle will run on two wheels and will look in some respects like an ice cream or some other variety of push cart. The interior will be fitted with a complete kitchen outfit, the utensils having been ordered with a view to having one sit in the other and thus take up but little space. The sides may be let down and the affair converted into a table, and in another corner of the kitchen is a small gasoline stove to be used for cooking the meals. The entire vehicle, when finished, will be constructed so that it may be hooked to the rear of an automobile, and when the Reeves family wants to spend a day in the woods all they have to do is to hitch the kitchen to the rear of their automobile and hike for the tall and uncut.

Clifton Cheney, formerly manager for the H. F. Keyes Wagon Factory, at Clinton, Mass., is now employed as salesman for the Buffalo Auto Car Co., and has the exclusive sale of that company's fire apparatus automobiles.

HANGING DOORS.

The rush to produce motor bodies of a high grade, and the dearth of first-class body makers to cope with the demand, has been the means, to a wide extent, of foisting upon the market a mediocre quality of body in its constructiveness and mechanical fitting up to, say, nothing of the illiterateness of the principles upon which proper design is based.

To understand first-class body making and to be able to make a first-class body are high gifts in coach body craftsmanship, but with this correct door hanging must, of course, be accompanied. There is nothing about a body that stamps the first-class craftsman like the correct fitting and hanging of a door. A properly hung door opens with a sweet freedom and is full of harmony in its working, while when it is closed on its pillar bearings it shuts with the deadly firmness of a safe door.

There are, however, amongst body makers ideas of what constitutes good door hanging, especially those of wide experience, though this matter in body making is not left to the caprice of what a workman may see fit to do, but what the management, as the responsible directors, may demand of workmen to do, to secure them against weaknesses being set up in the wear and tear of a door's working.

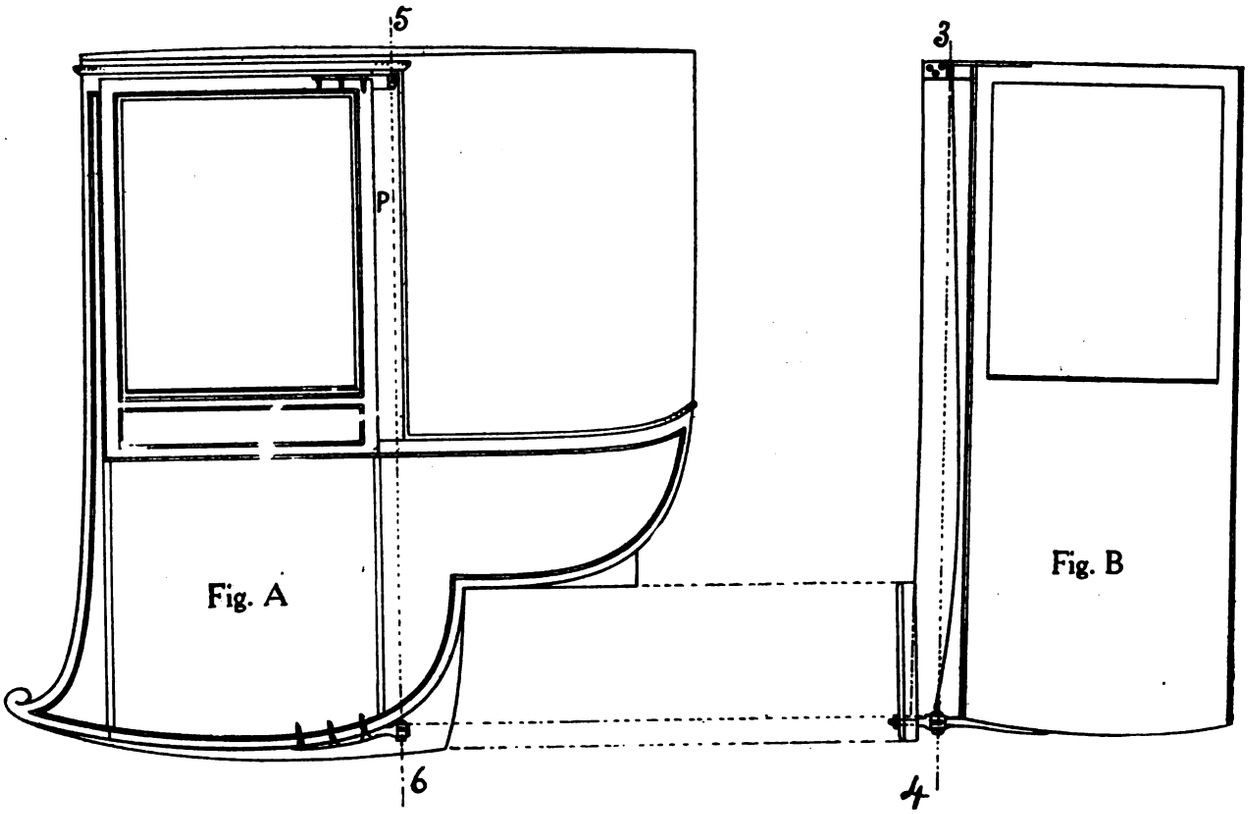
With some old firms, a body maker had to make his doors with a little twist on the shutting side, so that when the door was closed there was a pull on the lock both when the handle was turned. In a brougham the door was fitted to strike on the top edge of the pillar and slightly off at the bottom; the lock bolt when the handle was turned was thus given a draw to pull the door up to the check bearing at bottom, and so hold it tight to its position. Though this plan has for the time being a binding tightness on the door, yet in time, as the bolt plate of the lock gets worn, and the direct point of the door's bearing at the top also becomes compressed, a slackness is ultimately set up, and the door begins to rattle when the carriage is being driven. This defect is a great nuisance to those who use a brougham for the ease and quietness it is supposed to yield.

But a door ought not to be made with twist upon it at all; it should fit its bearings on the check of the shutting pillar with a clean deadness. The bearing on the check should be in direct contact for about six inches from the top and bottom of the door, and the distance between these points hollowed to allow a pull on the lock bolt when the handle is turned. But the best made doors are those fitted to be used with slam spring locks. These locks bring out the craftsmanship of the body maker, because the door's fitting must be of the highest quality to allow the lock to act automatically in shutting the door, in which no twist is allowable. The fit must be perfectly dead to the bearings of the door and pillars in all high-class body making. These locks are used in the bodies calling for them.

In the early days of coach body making, the doors of coach and chariot bodies were hung with plain brass butt hinges, such as are used on wagonette doors at present. The early brougham bodies were also fitted with these hinges. The name of the inventor of the concealed hinge has never been revealed in the history of coach building, nor do the patented inventions in the improvements of carriage building record the invention. But some twenty-five years ago a body maker who had the misfortune to end his days in Mount street workhouse, London, England, claimed to be the inventor of the concealed hinge, and, if this is true, it seemed a strange coincidence that within a stone's throw of the workhouse in Mount street was Cook and Robinson's shop, where the first brougham was built for Lord Brougham in 1838, and a sad fate for one to experience who had rendered such signal service to an ungrateful trade. But it is the lot of genius to lead the martyr's life, that others may fatten upon the fruits of its creation. While on this theme, it may not be foreign to the matter underway to state that there passed away in the early part of the year 1907 one, in the person of Mr. James Carpenter, of Southampton, who

Digitized by Google

claimed to be the inventor of the compass bedded undercarriage, which he made while in the employment of Rumble, of Long Acre, London, and after whom the "rumble" as fitted to four-wheeled carriages is called. Mr. Carpenter was a prolific inventor, and a first-class practical coach body and carriage maker, and was in his 84th year when he died.

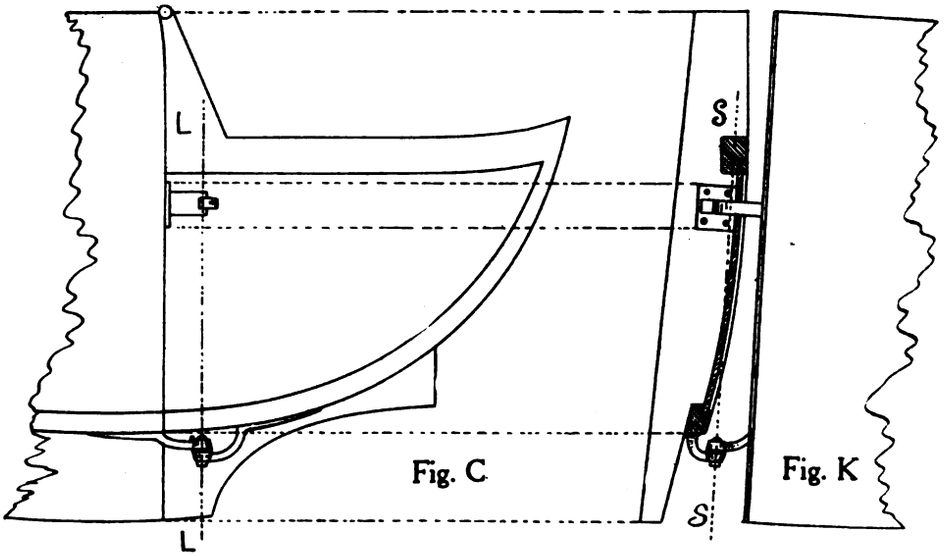


The diagram, Fig. A, shows a coupe motor body in partial elevation, with the door fitted with forged butt hinge at top and outrigger at bottom. The advantage of this hanging is that it is stronger than using concealed hinges, while it gives the same advantage in throwing the door back in line with the hinge pillar when it is open.

marked P, to which the top hinge is fixed, is boxed down ¼ in., so that the hinge when let into the top of the pillar, it is level with the side of the quarter. The part marked P is therefore a recessed panel ¼ in. deep, on the edge of which the plated bead of the body is fixed and jointed to the elbow piece.

Fig. B shows how the outrigger is fitted from its side view, the body piece being forged as a bolt which goes through the rocker and body plate, and is screwed up on the inside, while the jaw and center projection are in the solid. The line of the hinge centers is shown by chain line 3 4 when the door is open, Fig. B, and vertically as in Fig. A, 5 6.

This method of hanging a brougham or a limousine motor



The top hinge is forged specially for the particular use it is put to. It can be made of brass and fitted up by the founder, if he is supplied with a model to work from. This is the correct thing to do in having the hinge made, while the outrigger can be made in the shop by the smith, and fitted up by the viceman, to the requirements of the body. The part of the quarter, body door is both strong and firm, and vastly superior to the concealed hinge in motor carriage body building.

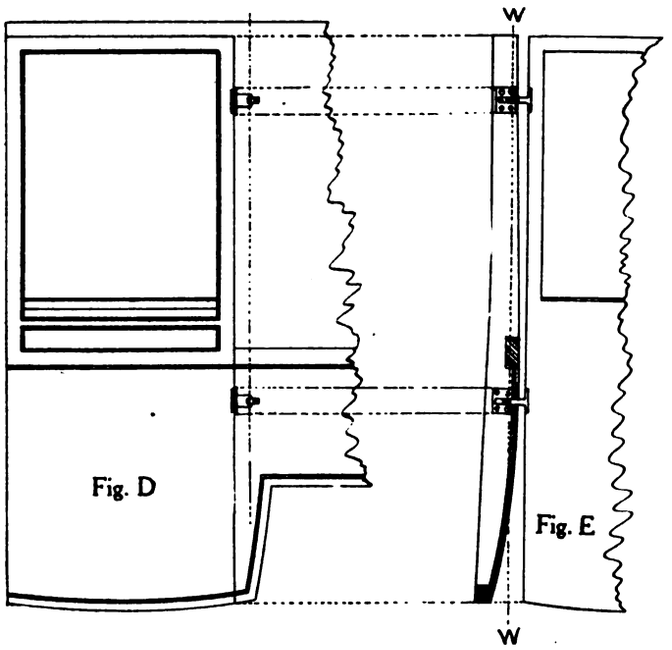
Fig. D shows a diagram of a section of a brougham body with concealed hinges let into the pillar and their line of centers, while Fig. E shows the front of the hinge pillar and the position of the door when open and the chain line of the hinge's.

Digitized by Google

center. The hinges should be let into the standing pillar square to the center line W W, and the bottom hinge as near to the outside of the pillar, without coming in contact with the panel. This is, of course, regulated by the turnunder, and the centers of the top and bottom hinge are settled by it.

Concealed hinges are, of course, the best for all high-class close carriage body making, as they admit of a clean level surface being given to the body's outline, without outward projections, which tend to mar the harmony of an artistic surface. But though the concealed hinge is in the lead of door centerings, still its make allows the entry of water to the pillar and panel of a brougham body, particularly the bottom hinge.

In washing off a brougham, the water enters through the circular bolt space of the hinge, ultimately decaying the pillar and panel, as well as setting up a damp fungus, which acts on the surface of the quarter panel and destroys the paint and



varnish surface. This is one of the drawbacks to the concealed hinge, but to prevent the inroad of water, many firms have the bottom made with a casing of sheet brass, which prevents the percolation of water to the pillar and panel.

Fig. C shows a section of a canoe landau, and the door fitted with concealed and outrigger hinges. This is a great advance upon hanging such doors solely with concealed hinges, which not only cut the pillar up, but allowed the door to fall when open at too flat an angle. The invention of the outrigger to work in conjunction with a top concealed hinge, as shown in Fig. C, is a vast improvement upon the old method of using double concealed hinges. Fig. K shows the position of the hinges with the door open, and their center line of working at S S, and in Fig. C, on the line L L, together with the design, the hinge may be forged to, from the elevation, while its shape and position is shown in end view in Fig. K.

The use of an outrigger hinge makes a stronger job in taking the weight off the door; without the side leverage of the weight acting upon it, as is the case where two concealed hinges are and were used in this work. And while the outrigger hinge is a great strengthening improvement, it does not detract in any way to the outline of the body, so that its use serves a twofold purpose.

"TONNETTE" A NEW NAME.

To avoid the confusion often occasioned by the various names given to automobiles equipped with a body having a short tonneau seat accommodating two persons, J. M. Quinby & Co. have decided to use the name "tonnette" in describing their bodies of thin type. This description will supersede baby tonneau, toy tonneau, miniature tonneau and other similar names.

The most popular of the Quinby 'tonnettes," which have been fitted to the Lozier Briarcliff models, is the one finished in golden brown striped with fine lines of gold leaf and upholstered in tan leather fitted smoothly like a kid without tufting.

THE MOTOR MANUAL.

So popular has the demand been for the Motor Manual abroad that the publishers have continued to revise each edition until it stands to-day as the most complete treatise to be obtained in connection with the control, operation and general knowledge of motor cars.

The copy that is at hand is of the eleventh edition, representing the 130th thousand. Motor Manual is embellished with two hundred specially prepared illustrations and diagrams. Every phase of the motor car is scientifically treated and is prepared in such a way as to be almost free of technical language. Price, 75 cents, includes postage.

The National Association of Automobile Manufacturers have arranged to hold the Chicago Show February 5 to 12, 1910, and they have also sanctioned a show to be held at Atlanta, November 6 to 13, 1909.

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, five cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

HELP WANTED.

Wanted—Salesman in vehicle and implement trade to handle side line of buggy tops, etc. Liberal commission paid. Write at once to Bauer Bros. Mfg. Co., Cincinnati, Ohio.

Wanted—A first-class salesman to sell auto bodies. Address "B.," care The Hub, 24 Murray Street, New York, N. Y.

Wanted—Woodworkers on limousines. Must be first-class and understand draft piece work. Royal Tourist Car Co., 72d Street and L. S. & M. S. R. R., Cleveland, O.

Wanted—Bodymakers, six or more, to work on electric and gasoline closed or limousine automobile bodies. Are willing to teach a number of bright young bodymakers how to build limousine bodies. Columbus Buggy Co., Columbus, O.

SITUATIONS WANTED.

Wanted—Position by carriage and wagon painter. Practical in all branches. Used to handling large force of men. Highest reference. Address "J. R.," care The Hub, 24 Murray Street, New York, N. Y.

Wanted—Position as superintendent in large carriage factory, as my experience in the past has been as such. Have been superintendent for a number of years, and am a practical man. Am a hustler and an organizer of men, and can get out work at a low cost. Address "W. W.," care The Hub, 24 Murray Street, New York, N. Y.

Wanted—Position as foreman painter, or assistant superintendent, by young man with modern factory experience. Address "Z," care The Hub, 24 Murray Street, New York, N. Y.

FOR SALE.

For Sale—Big bargain. Largest carriage works in middle western town of 40,000 population. Doing splendid business—$3,000 worth last month. Have three fires working. Employ five painters, trimmer and woodworker. Build all kinds of new work. Building can be rented very cheaply—$55 per month. Stock invoices $5,000, but will sell for $4,000 cash, as must get out of business on account of sickness in family. Address Box 447, care The Hub, 24 Murray Street, New York, N. Y.

PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 608 F Street, Washington, D. C. Established 1883. I make an investigation and report if a patent can be secured and the exact cost. Send for full information. Trade-marks registered .

Digitized by Google

SATISFIED CUSTOMERS

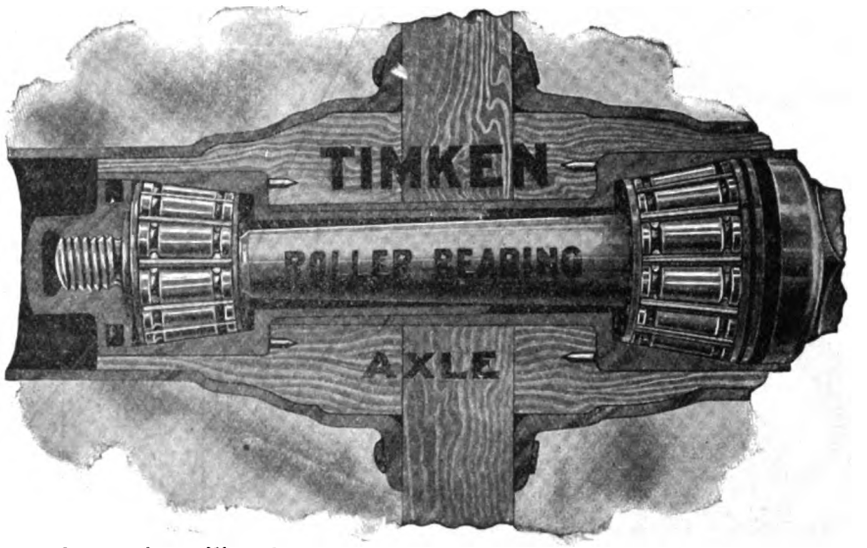
Did you ever have a customer express regret at having

TIMKEN ROLLER BEARING AXLES

on his vehicle?

Sometimes it is difficult for a buyer to make up his mind to get the best, but when he does he never regrets it.

When you sell vehicles equipped with TIMKEN AXLES you make more money—your customer is always satisfied.



TIMKEN ROLLER BEARING AXLES

reduce draft 50 per cent, save wear and tear on horse and vehicle; save on feed bills; are simple, durable and dustproof; require oiling but once a month. Guaranteed for two years.

Write for catalog and prices.

TIMKEN ROLLER BEARING CO.

Branches
10 E. 31st Street, New York
429 Wabash Avenue, Chicago, Ill

Canton, Ohio.

The Fairfield Rubber Co.

Manufacturers of Carriage Cloth, Imitation Leather, etc. For Automobiles and Carriages

Fairfield - - - Connecticut

ESTABLISHED 1886.

Correspondence School of Carriage and Motor Carriage Drafting

A thorough, practical tuition is given through this correspondence school. The theory and practice of construction, bookkeeping, perspective. Many men now hold good positions through taking the courses of instruction.

Principal, THOS. MATTISON,
Hillside Avenue, Bitterne Park,
Southampton, England.

Author of "The Coach Body Makers' Guide," $3.00; a practical treatise on "The Suspension of Carriages," "Bookkeeping," and other carriage building works.

Carriage Mechanics

Desiring to improve their present Condition should attend the

TECHNICAL SCHOOL

FOR

Carriage Draftsmen and Mechanics

SUPPORTED BY THE

Carriage Builders' National Ass'n.

The object of the School is to teach men to design vehicles and make working drawings, and to otherwise facilitate their work in the shop. Only those men employed in carriage or automobile building or their accessory trades are admitted to its privileges.

The classes are conducted in three divisions, viz.: Corresponding, Day, and Evening. The former is open during the entire year, while the day and evening classes are in session only from October 1st to April 1st.

The tuition is moderate.

For prospectus and full particulars, write to the instructor,

ANDREW F. JOHNSON,
18 West Forty-fourth St.,
NEW YORK CITY.

Digitized by Google

A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

H. K. PORTER
EVERETT, MASS., U.S.A.
BOLT CLIPPERS

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

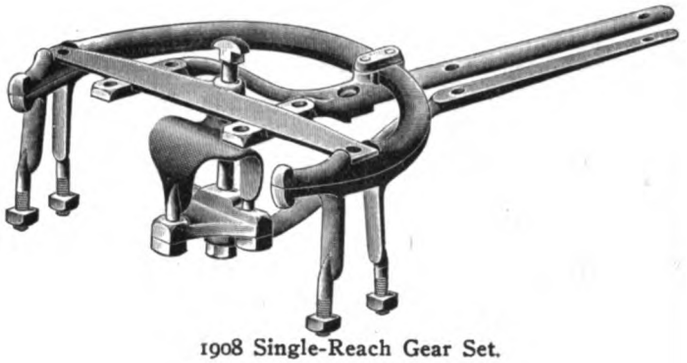
Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.
745 THIRD AVE., BROOKLYN, N. Y.

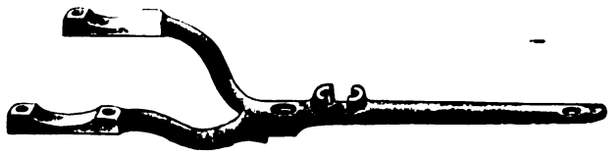
INDEX TO ADVERTISEMENTS.

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.



Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

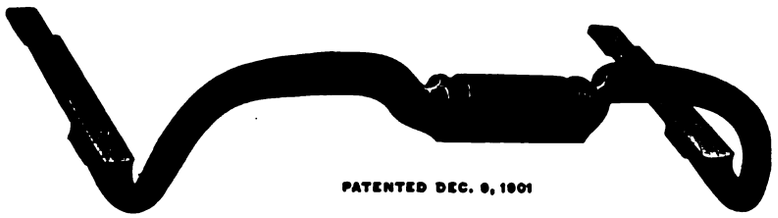
JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



PATENTED DEC. 9, 1901

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland, Pa.

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Please mention "The Hub" when you write.

Digitized by Google

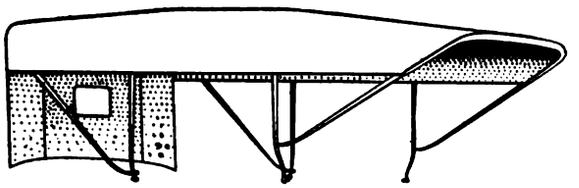
TOPS and Upholstering

FOR

AUTOMOBILES

AND

HORSE VEHICLES



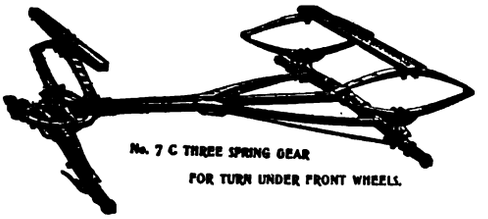
MANUFACTURED BY

Ball Buggy Top Co.

YORK, PENNSYLVANIA

THE OLD RELIABLE AND ONLY SCHUBERT BROS. GEAR CO.

50 Other Styles



No. 7 C THREE SPRING GEAR
FOR TURN UNDER FRONT WHEELS.

Always address us this way if you wish any of our specialties. Work-in-the-White Bodies, Seats and Gears for Carriages and Automobiles. Special work in bodies promptly attended to. Let us figure with you. **Would you like our Catalogue?**

SCHUBERT BROS. GEAR CO., Oneida, N. Y.

Quick-Wear-Out Tires Do Not Pay

Putting tires made of worn-out rubber on vehicles doesn't help the buyer and doesn't help the seller. Goodyear Wing Tires are just as good as pure *new* rubber, and the Goodyear "Wing" construction can make them.

GOODYEAR

WING CARRIAGE TIRES

are made of the highest grade gum, fresh from the rubber trees—lively and durable. It is quoted on the market at $1.30 per pound today. We *could* buy "Lapori" or "Guayule" rubber at 35 cents a pound, or even old reclaimed rubber at 10 cents per pound, but it won't do for a Goodyear. Notice the Goodyear Wings. They keep out all dust, grit, mud and water, which gets in under the ordinary solid tire and wears it away. Write today for booklet showing how Goodyear's are built. Ask for sample section.

The Goodyear Tire & Rubber Co., Canal St., Akron, O.

Boston, New York City, Milwaukee, Pittsburg, Louisville, Denver, Cincinnati, San Francisco, St. Louis, Omaha, New Orleans, Baltimore, Los Angeles, Chicago, Buffalo, Washington, Memphis, Kansas City, Philadelphia, Cleveland, Detroit, Atlanta, Dallas, St. Joseph, Indianapolis

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.
Dalsell Axle Co., South Egremont, Mass.
Timken Roller Bearing Axle Co., Canton, Ohio.

Bodies, Seats, Etc.
Woodman, Joel H., Hoboken, New Jersy.

Bodies in the White.
Miller Bros., Amesbury, Mass.
Schubert Bros. Gear Co., Oneida, N. Y.

Bolts and Nuts.
Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.
Wiese & Co., Wm., New York City.

Carriage Forgings.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.
Gifford & Son, John A., New York.

Carriage Goods.
English & Mersick Co., New Haven, Conn.
Fairfield Rubber Co., Fairfield, Conn.
Gifford & Son, John A., New York.

Dashes, Fenders, Rails, Etc.
McKinnon Dash Co., Buffalo, N. Y.

Fifth Wheels.
American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Finished Vehicles.
Studebaker Bros. Mfg. Co., South Bend, Ind.

Hubs.
American Wood Block Co., The, Delphos, Ohio.
Koller & Co., J. B., Mechanicsburg, Pa.

Jacks.
Hankinson, J. V., Franklin, O.

Lamps.
Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Machinery and Tools.
Barnes Co., W. F. & John, Rockford, Ill.
Porter, H. K., Everett, Mass.

Miscellaneous.
Standard Oil Cloth Co., New York.

Ornaments.
Palm, Fechteler & Co., New York, N. Y.

Rubber Tires.
Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Kokomo Rubber Co., Kokomo, Ind.
Stein Double Cushion Tire Co., Akron, O.

Shaft Couplings and Anti-Rattlers.
Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Metal Stamping Co., New York City.

Springs and Gears.
Fitch Gear Co., Rome, N. Y.
Indianapolis Bolster Spring Co., Indianapolis, Ind.
National Spring and Wire Co., Albion, Mich.
Schubert Bros. Gear Co., Oneida, N. Y.
Spring Perch Co., Bridgeport, Conn.

Spokes.
Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.
Koller & Co., J. B., Mechanicsburg, Pa.

Trimming Materials.
Stevens & Sackett Co., New Haven, Conn.

Varnishes, Paints and Japans.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Masury & Son, John W., New York and Chicago.
Pierce Co., F. O., N. Y. City.
Smith & Co., Edw., N. Y. City.
Standard Varnish Works, New York City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

White Lead.
Eagle White Lead Co., Cincinnati, Ohio.

Wheels.
Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.

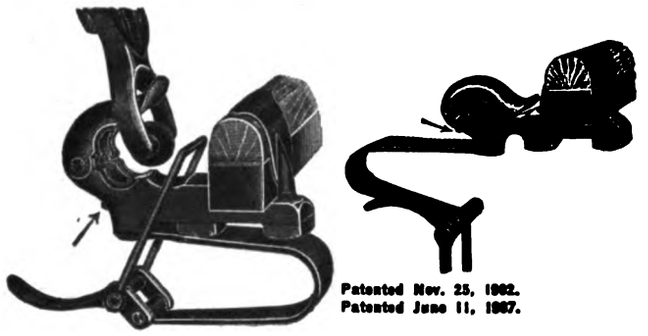
Wheel Stock, Bent Wood, Etc.
Crane & MacMahon, New York.
Koller & Co., J. B., Mechanicsburg, Pa.
Tucker Wood Work Co., Sidney, Ohio.

Digitized by Google

Eccles Ball Bearing Couplings

ALL OUR COUPLINGS ARE SHIPPED OUT WITH TWO PIECE BUSHINGS, FASTENED IN THE COUPLINGS

WHEN BUSHINGS ARE WORN OUT BY LONG USE, THEY CAN BE INSTANTLY REPLACED AND FASTENED INTO THE SOCKET BY OUR SPECIAL PROCESS



Patented Nov. 25, 1902.
Patented June 11, 1907.

THE SPRING IS PIVOTED AT THE FRONT SO THAT IT CAN BE TURNED OUT OF THE WAY OF THE WRENCH WHILE CLIPPING COUPLING TO THE AXLE.

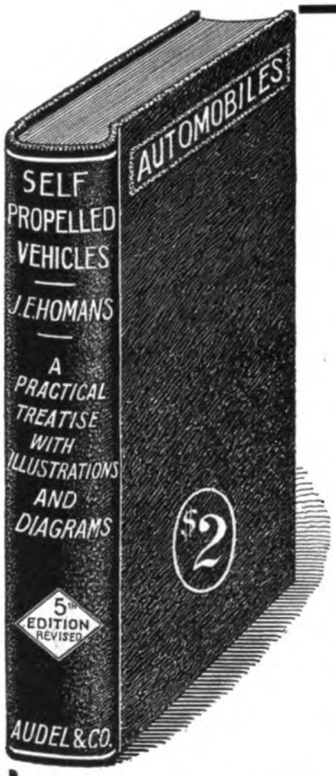
No Lost Bushings when you Use Our Couplings

We Make a Full Line of Carriage and Wagon Forgings

RICHARD ECCLES COMPANY

Catalogue No. 15 is our latest

AUBURN, NEW YORK



"Self-Propelled Vehicles"

Fifth Edition, Revised.

A practical treatise on the theory, construction, operation, care and management of all kinds of Automobiles.

By

JAMES E. HOMANS, A.M.

Contains 608 pages and upwards of 500 illustrations and diagrams, giving the essential details of construction and many important points on the successful operation of the various types of motor carriages driven by steam, gasoline and electricity.

This work is now the accepted standard, explaining the principles of construction and operation in a clear and helpful way. This book will be sent postpaid to any address in the United States, Mexico or Canada upon receipt of $2.00.

Address

TRADE NEWS PUBLISHING COMPANY

24 Murray Street, New York

J. B. Koller & Company

Manufacturers of all kinds and sizes of

Finished Spokes and Bent Rims

Also all kinds of

SLEIGH, SLED AND BOB SLED RUNNERS

MECHANICSBURG, PA.

MILLER BROTHERS

Builders of

CARRIAGES

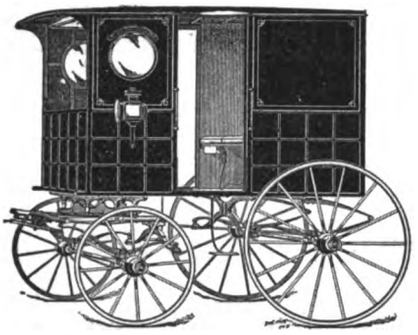
IN THE WHITE

AND

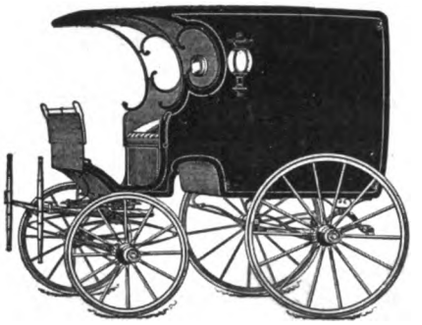
Automobile Bodies

AMESBURY, MASS.

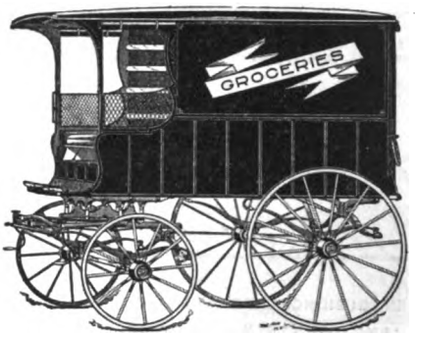
Digitized by Google



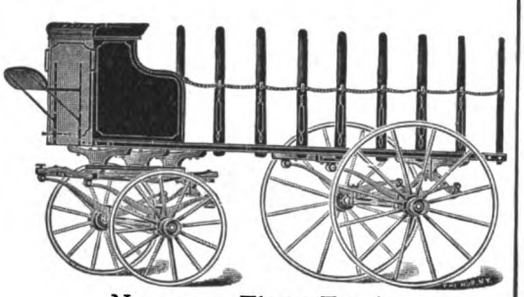
No. 112.—Milk Wagon.



No. 111.—Altman Wagon.



No. 113.—Grocery Wagon.



No. 122.—Flour Truck.

Electrotypes

of the vehicles presented on this page will be forwarded on receipt of

75 cts.

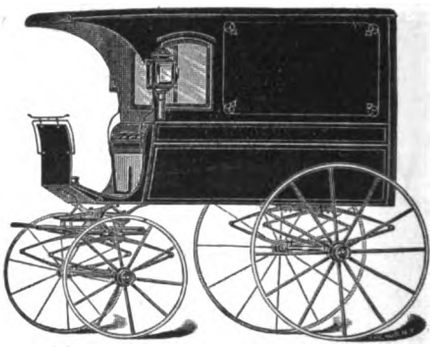
for each cut, to any address. Postage prepaid.

Catalogue

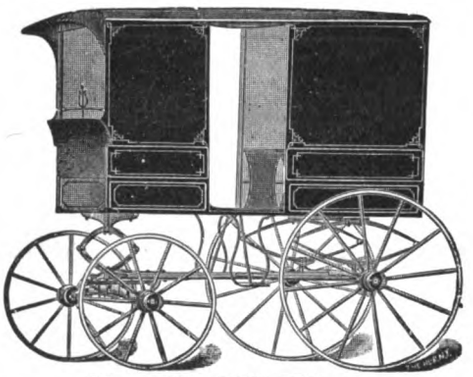
containing nearly 200 illustrations of carriages, wagons, sleighs, and miscellaneous cuts will be sent upon application.

Trade News Publishing Co.

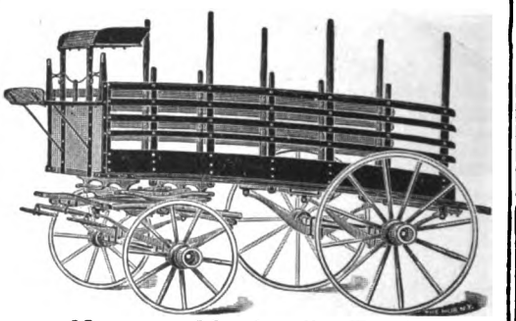
24-26 MURRAY ST.
NEW YORK



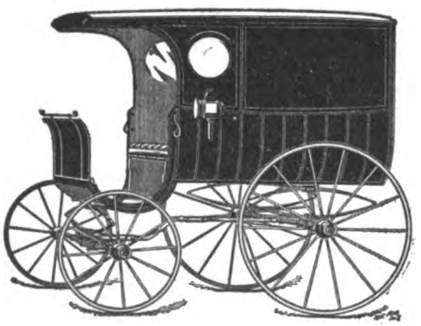
No. 115.—Delivery Wagon.



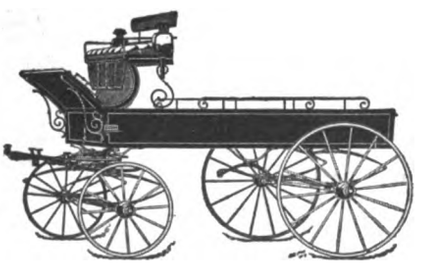
No. 116.—Milk Wagon.



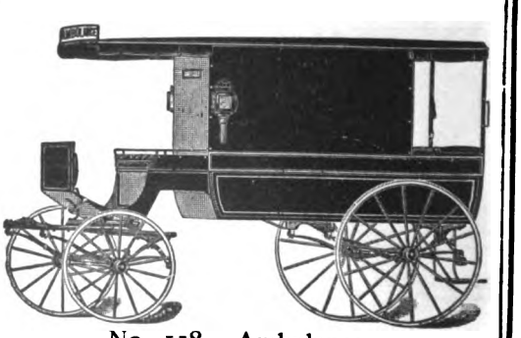
No. 117.—Merchandise Truck.



No. 114.—Delivery Wagon.



No. 124.—Delivery Wagon.



No. 118.—Ambulance.

Digitized by Google

WM. WIESE
With Hardt, Von Bernuth & Co.
Since 1883.

WM. WIESE & CO.

ALBERT MAERTENS
With Hardt, Von Bernuth & Co.
Since 1894.

Formerly Carriage Goods Department of HARDT, VON BERNUTH & CO.

Carriage and Automobile Linings and Livery Cloths

Sole Agents in the United States for
WULFING'S CARRIAGE CLOTH AND EL DE BARAN GOATSKIN

66-68 Greene St., New York

Ever get kicks about your carriage tops blistering and cracking?

Hundreds of manufacturers don't because they use MERITAS—the enameled oil cloth that's guaranteed.

Try it. At your jobber's.

Standard Oil Cloth Co.
320 Broadway New York

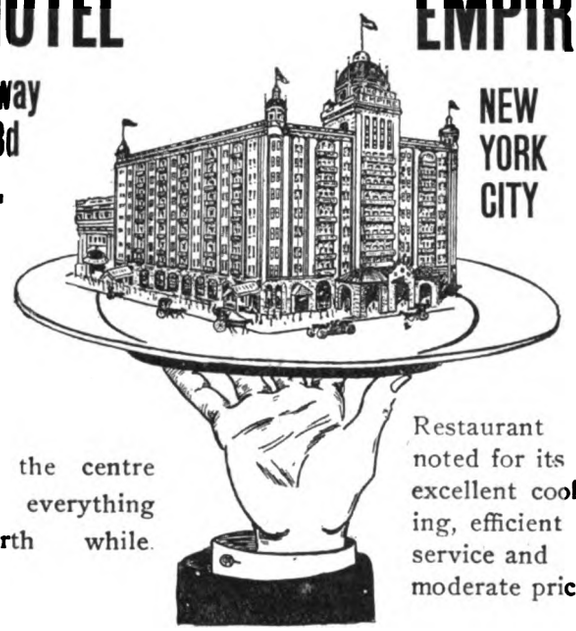
HEADQUARTERS FOR CARRIAGE BUILDERS.

Let us offer you the most delightful hotel accommodation at moderate cost.

HOTEL EMPIRE

B'way 63d St.

NEW YORK CITY



In the centre of everything worth while.

Restaurant noted for its excellent cooking, efficient service and moderate prices

Rooms (use of bath)..$1.50
Rooms (with bath)... 2.00
Suites (with bath).... 3.50

FIVE MINUTES WALK TO SHOPPING AND AMUSEMENT CENTRES

All Street Cars—One Minute to "L" and Subway

Send for Guide of New York, Free

W. JOHNSON QUINN, Prop.

Our Carriage or Spring Edge Cushion Frame

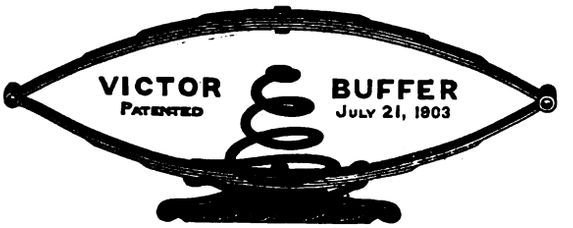
Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

For Weak or Overloaded Springs.

VICTOR STEEL SPRING BUFFERS

Save wagon, prevent breakdowns, and add materially to the carrying capacity. If your dealer does not have them write to us direct.



Made in Four Sizes: 0, 1 1-4 in. spring & under; 1, 1-4 in. to 1 1-2 in. spring; 2, 1 1-2 in to 2 in. spring; 3, 2 in. to 2 in. spring.

Carrying capacity of each spring: No. 0, 400 lbs.; 1, 750 lbs.; 2, 1000 lbs.; 3, 1250 lbs.

Manuf'd by INDIANAPOLIS BOLSTER SPRING CO.
INDIANAPOLIS, INDIANA.

CARRIAGE All kinds of strap work for carriage builders. Our capacity for work of this kind is practically unlimited. For quality and price we beat the world. Send sample and let us quote prices. -:- -:- **STRAPS**

J. C. DECKER - - - - Montgomery Penna.

Digitized by Google

THE BRADLEY SHAFT COUPLING

OPEN

Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME!

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

C. C. BRADLEY & SON, Syracuse, N. Y.

CLOSED

C.H.A.T.

Helps Secure Situations.

Carriage, Harness and Accessory Traveling Salesmen's Association

OF THE UNITED STATES.

All Commercial Travelers in Above Lines Eligible. No Others. Pays Death Benefits.

Membership Fee, - - - $3.00
Annual Dues, - - - - 1.00

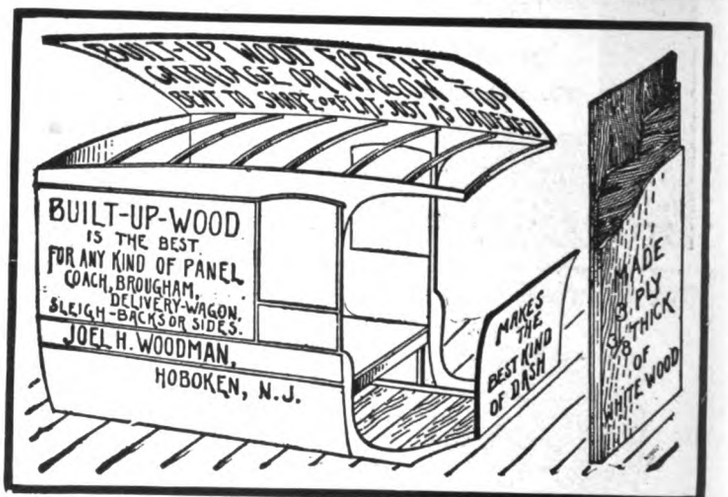
Employers of Traveling Men eligible to join as associate members on payment of $5.00, and are exempt from all further dues.

Manufacturers of carriages, harness or goods that enter into their construction, jobbers of same, can secure good, reliable and efficient salesmen through our Association, as the members of this Association have the best facilities for knowing all about men who are seeking situations, and none will be recommended unless they are first class and worthy of support.

Salesmen in need of a situation, or manufacturers in need of a salesman, address for further information,

L. H. KRONFELD, Secretary.

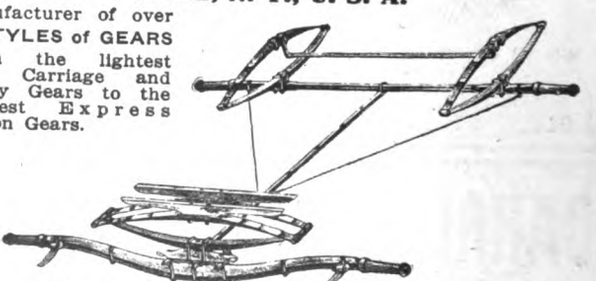
Box 57, Mount Vernon, N. Y.



FITCH GEAR COMPANY

ROME, N. Y., U. S. A.

Manufacturer of over 40 STYLES of GEARS From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.



The Double Elliptic 3-Spring Gear is the most practical combination business and pleasure gear on the market, and is equipped with Wrought or our Common Sense Short Turn Fifth Wheel. Send for our No. 24 Catalogue.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

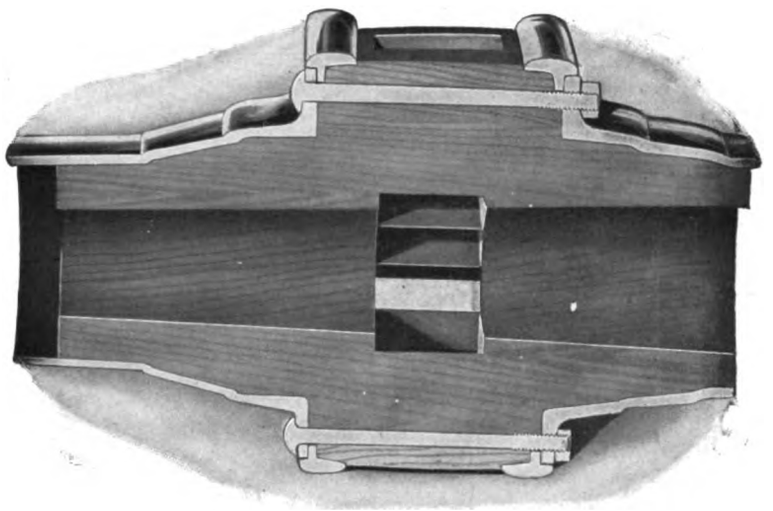
F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

C. T. RAYNOLDS & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

The American Wood Block Co., Delphos, O.



SECTIONAL VIEW.

Hub Blocks

Green—Air and Kiln Dried. Sold by grade or timber run. Compressed blocks or otherwise. 3 in. to 12 in. diameter. Stock kept up to standard quality and ready for shipment at all times.

GILLETTE'S

"IDEAL" HUB

It stands the Racket

The **IDEAL** hub makes the strongest wheel. Repairs are less than on any other style; actual use has proven these facts.

IDEAL is metal protected, wood to wood center, means elasticity; simplicity of construction, easily and quickly repaired, driven spokes best of all, no metal to corrode.

IDEAL has the patented inverted flange that prevents lateral strain.

IDEAL means less tire resetting.

Try it—it is guaranteed.

We want the wheel makers to use the **IDEAL** in their wheels.

The American Wood Block Co.

DELPHOS, OHIO

HUB BLOCKS **HUBS** **DIMENSION STOCK**

Time Has Told the Story!

Service and satisfaction always follow our rolling stock

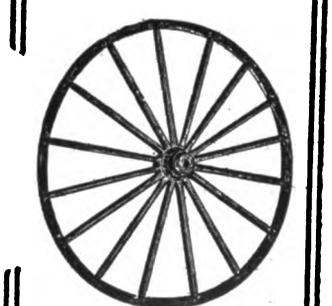
WHEELS

ALL KINDS—BEST QUALITY

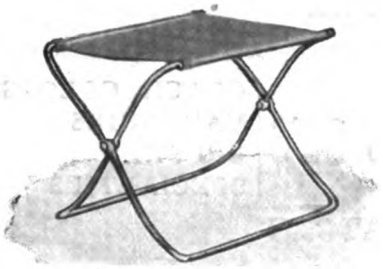
Also RIMS and SPOKES

The Eberly & Orris Mfg. Co.

MECHANICSBURG, PA.



Digitized by Google



THIRD SEATS

Money Makers for Carriage Dealers.

BROWN DUCK OR CARPET SEATS

STEEL FRAME, JAPANNED OR OXYDIZED

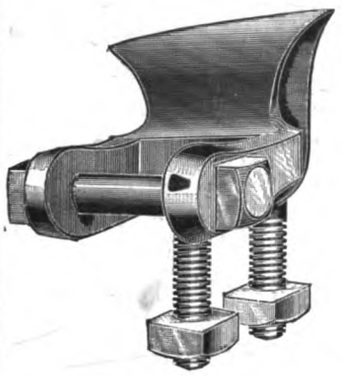
Brass Plated Rails on Dashes a leader for 1910.

McKINNON DASH COMPANY

Cincinnati, Ohio
Troy, Ohio.

Buffalo, New York.

St. Catharines, Ontario.



Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips ⅝ or ¾ width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

Catalogue "H" and Prices on Application.

COLUMBUS BOLT WORKS, Columbus, O.

Kokomo Solid Rubber Tires

¶ In rubber substance the Kokomo Solid Rubber Vehicle Tire is truly **SOLID.**

¶ Solid with the pure stock that has made them an exception to the ordinary tires of commerce.

¶ In Kokomo quality there is an established standard that is recognized as the highest ideal of tire construction. The Kokomo is a standard tire in every respect.

¶ Kokomo Tires always score in the running, and the longer the test the more convincing the results.

Kokomo Rubber Company

Kokomo, Indiana, U. S. A.

Digitized by Google

The Hub

In spite of all the surface discouragements of the past two years there is probably as much enlargement of old and building of new carriage capacity as there was during the season preceding the October depression in 1907. During that time an instinct that something was going to happen held enterprise back somewhat. To-day an instinct possesses the most capable carriage builders that something is going to happen and they are wisely getting ready for it by expansion of capacity.

Oldest Carriage Journal in the World

1858 1909

Vol. LI. No. 6 SEPTEMBER, 1909

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

C. A. WILLEY COMPANY

Color Grinders

AND MANUFACTURERS OF

SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.

WILLEY'S SUPERFINE SPECIALTIES C CO & CH R COLORS TRADE MARK

92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.

CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

ESTABLISHED IN 1791

Wm. Harland & Son

Beg to announce that they have removed their United States Headquarters to Genesee Street and Erie Canal, Buffalo, N. Y.

Wm. Harland & Son

IMPORTERS OF

Harland's English Varnishes

FOR

Coach and Automobile Builders, Railway and Street Car Finishing

AND MANUFACTURERS OF

High Grade Varnishes for all Purposes

FACTORIES:

MERTON, LONDON, S. W., ENGLAND.

GENESEE STREET and ERIE CANAL, BUFFALO, N. Y.

400 EASTERN AVENUE, TORONTO, ONTARIO.

Western Branch, 40 Dearborn Street, Chicago. C. H. Schooley, Manager.

General Manager United States and Canada, H. Hagger.

Please mention "The Hub" when you write.

Digitized by Google

JOHN W. MASURY & SON

MANUFACTURERS OF

Superfine Coach Colors and Varnishes

NEW YORK——AND——CHICAGO

SOLID BENDINGS

MAKE FAULTLESS SEATS

CATALOG "H" SHOWS SIZES
WRITE FOR IT
THE TUCKER WOODWORK CO. SIDNEY, OHIO.

Automobile Locks

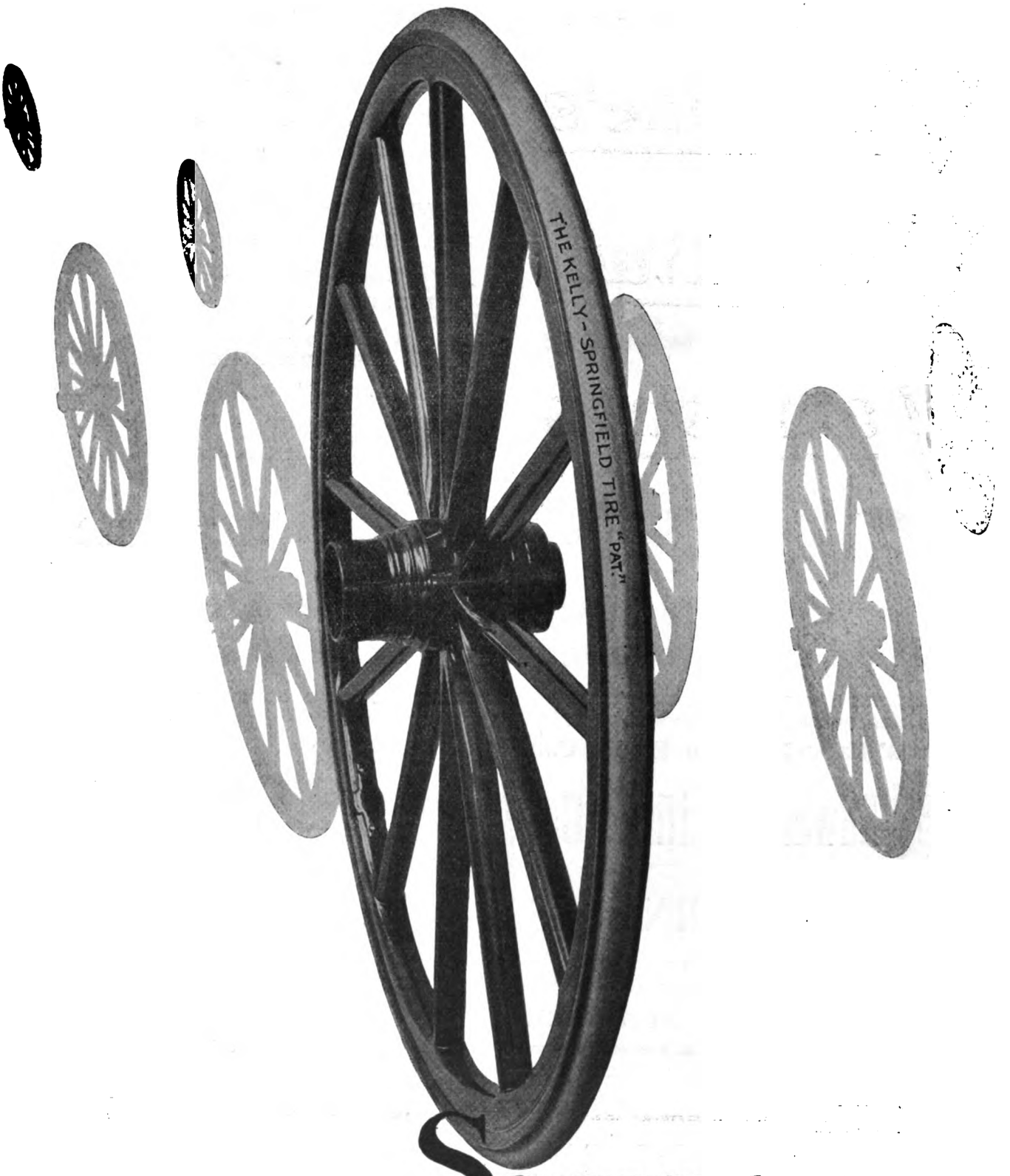
We sold 3000 pairs of No. 999 Safety Hook Door Locks to the manufacturer of a $1500.00 car. They cost this manufacturer 95 cents per pair more than the Lock he had used for the past season.

That's the whole story.

The English & Mersick Co.
New Haven, Conn.

Please mention "The Hub" when you write.

Digitized by Google



SOMEBODY said that you never know how good a thing is until you see the imitation. WE say you never know how bad its imitations are until you see the

Kelly-Springfield Tire

Digitized by Google

Valentine's Vanadium Varnishes

Vanadium Varnish has been specially developed for its adaptability to the exacting needs of automobile painting and finishing. . . . .

Varnish is full-bodied, free-working and perfect-flowing, rapid and hard-drying, resisting action of the elements, mud and grease. . . . .

That are unexcelled in brilliancy and durability. They wear bright. Pale Vanadium is the palest high-grade varnish made. . . . . .

Over 80 per cent of all exhibitors at the automobile shows of the last four years finished with VALENTINES VARNISH

VALENTINE & COMPANY,

NEW YORK, CHICAGO, BOSTON, TORONTO, LONDON, AMSTERDAM, PARIS.

82 Years' Experience in Every Can

E.S. 1827 & CO. **Edward Smith & Co.**

CARRIAGE VARNISHES

Everything from the
Bare Wood to the Finishing Coat.

CHICAGO **NEW YORK**

HOTEL EARLINGTON

55 WEST 27TH STREET
Near Broadway, NEW YORK

This well known, absolutely fireproof hotel, after being entirely renovated, redecorated and fitted up complete with new plumbing has now reopened.

Rates from $1.00 and Up
With Bath, $5.00 and Up

Special rates by the season or year for permanent guests.
A special feature will be the cuisine, both in the dining room and in the new cafe for ladies and gentlemen. A la Carte and Table d'Hote.
Hotel under the management of.

GUERNSEY E. WEBB
Formerly of the Ansonia.

RUB ——— RUB ——— RUB

THAT'S THE EXPERIENCE SOME PAINTERS HAVE WITH A POOR RUBBING VARNISH. THEY RUB TILL THEIR HEART ACHES ONLY TO HAVE THE VARNISH SWEAT, OR ROLL UP UNDER THE PAD.

XX Diamond Rubbing and Hard and Quick Drying Rubbing "A"

DRY HARD TO RUB IN TWO DAYS, WITHOUT SWEATING, ARE TOUGH AND THE BEST FOUNDATION FOR FINISHING COATS.

MADE BY **MOLLER & SCHUMANN CO.**

MARCY AND FLUSHING AVES., **BROOKLYN, N. Y.**

Digitized by Google

Right Varnish Makes
Satisfactory Vehicles

Carriages, buggies and other vehicles that satisfy must not only be well made, they must also be **well varnished.** Your reputation and your profits depend upon the varnish you use. You can make no mistake by using

Standard Varnish Works' Varnishes

They are the standard of excellence because they represent a

Unity of Color, Lustre, Working, Drying and Wearing Properties

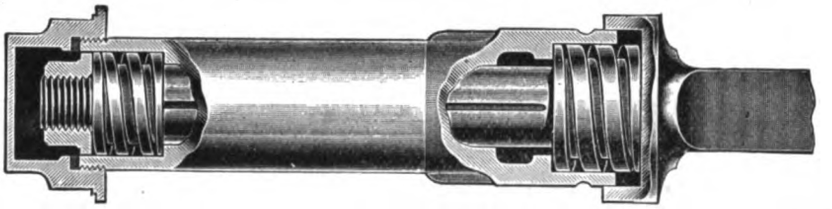
Of those not using these varnishes we ask for an opportunity to prove the validity of our claims

STANDARD VARNISH WORKS

CHICAGO NEW YORK LONDON BERLIN BRUSSELS

INTERNATIONAL VARNISH COMPANY, Ltd., Toronto

PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continnal adjusting of nuts.

FOR PARTICULARS WRITE

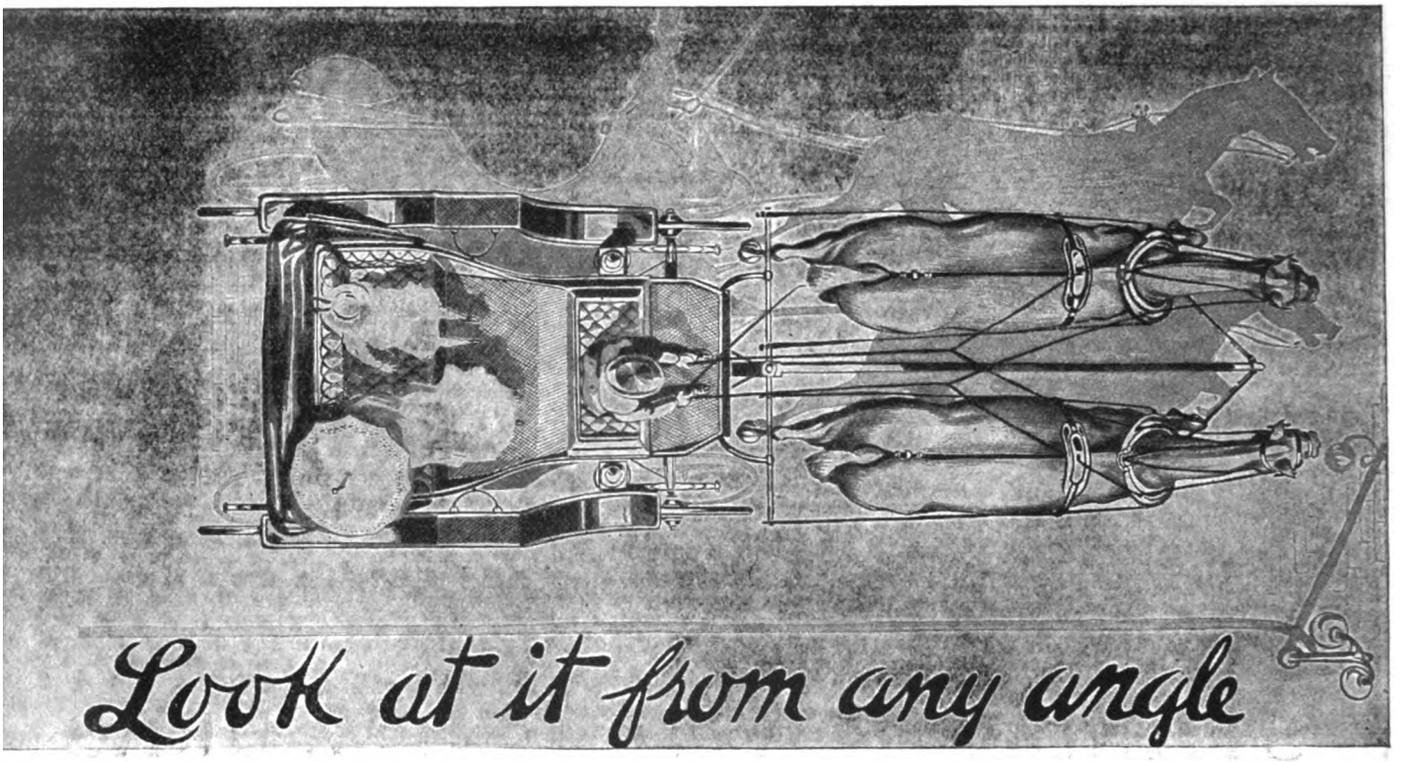
DALZELL AXLE CO., South Egremont, Mass.

BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.

Digitized by Google



DEALER AND CONSUMER LOOK AT THEIR PURCHASE OF

GOODRICH SOLID RUBBER CARRIAGE TIRES

FROM THE

ANGLE OF REPUTATION

The B. F. Goodrich Company has been long established and conspicuously successful in the manufacture of reliable Solid Rubber Carriage Tires. This is reassuring to the Consumer.

And it has made its methods of business eminently considerate of the Dealer.

ANGLE OF SAFE INVESTMENT

Dealer and Consumer appreciate the significance of a thoroughly definite and reasonable guarantee of manufacturing processes and materials. Such a guarantee goes with every Goodrich Solid Rubber Carriage Tire.

ANGLE OF UTILITY

The Dealer will sell, and the Consumer will buy Goodrich Solid Rubber Carriage Tires; because the comfortable qualities—durability and resilience—are unquestioned. That is decisively determined by the Goodrich guarantee.

AN INTERESTING NEW CATALOGUE IS NOW READY.

THE B. F. GOODRICH COMPANY,

AKRON, OHIO.

Digitized by Google

The Hub

Copyright, 1909, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. LI. SEPTEMBER, 1909. No. 6.

THE TRADE NEWS PUBLISHING CO. OF N. Y.
Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*
24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

REPRESENTATIVES:
J. Henry Klune. J. G. Tanner.

Other Publications of Trade News Publishing Co.:
HARNESS (monthly) .....per year, $1.00
AMERICAN HARNESS AND SADDLERY DIRECTORY (annual) .....per copy, $4.00

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 10 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 25th of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide due Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

Accessory Organization.

The accessory manufacturers for a long, long time took no very special interest in trade organization. Of late years they have been finding it a good thing to get together. This has been especially observable in the woodworking department of accessories. Even the rim manufacturers recently got together. Other little associations are talked of. All that is needed is for some one to get out among his associates and holler. The disadvantage of having no organization in the midst of allied trades which have organization is felt.

One reason which operates against the ready organization of some accessorial interests is that they are so widely scattered and their trade is often localized, though there are numerous shining exceptions to this rule. Yet, as things stand there is considerable room for organization. In some industries great combinations are made. In small industries widely scattered great combinations are practically impossible, but it is possible to get most of the benefits of combination through the organization of those engaged in the same line. This gives the advantage of combination and yet presents individual independence.

Departure in Delivery Wagon Construction.

That there is an increasing expressiveness, if the word be excusable, in the construction of delivery wagons, has been more than once recently mentioned in these columns. Designers in quite a number of carriage factories have recently brought out new designs which readily address themselves to the critical eye and to the popular eye as well. The departures from pre-established styles is emphatic, original and taking. There is an effort to adopt styles to uses, that is, to make the wagon in a measure to represent its use. The florists' delivery wagon presents very different features in make-up from the department store or the brewery wagon. There is a pronounced departure in this respect. In earlier construction all delivery wagons were more or less alike. That was when their use was restricted to the delivery of retail store parcels. Since then their field has been greatly expanded and there is now scarcely an industry which cannot be supplied with a special type of wagon more or less representative of its line of business.

This departure in which art is closely observed, and wherein good taste and originality are manifest, is bound to stimulate demand for such wagons. They possess an advertising feature not to be overlooked. They afford an opportunity and a field for the wagon builder. They stimulate the desire of merchants and manufacturers to possess something on wheels that is unique and indicative.

Builders who have hit upon the idea of appealing to the natural love of individuality and distinctiveness are meeting with a hearty response. They make something that allows more profit because such construction is largely a matter of decoration as well as of artistic lines of the body. The delivery wagon, however, appears to be about the only vehicle which admits of such liberties or to such an extent. It opens a field for the designer which of late years has been narrowing.

Light Wagons.

That special type of light vehicle known as a business wagon has, like the old-time buggy, been passing through the experience of lightening. The average business wagon of to-day weighs considerably less than the business wagon of several years ago. Roadsters belong to the same category. It is a matter of instinct with American builders to make a vehicle as light as possible. European builders have been forced to take notice of this tendency and use less material when it serves no necessary purpose.

For two or three years past the designers, encouraged by the practical shop mechanics, have been drawing down the weight of business wagons until it would appear the limit had been reached. Builders who make them a specialty have been rewarded by returns. As to a good many of them the horse has to turn his head around and look to make sure he has something on wheels behind him. In one respect they represent possibly the highest type of real carriage building skill.

Digitized by Google

The "Parts" Exhibit.

The C. B. N. A. will have a fine hall for the exhibits which will go to Washington. It is pleasing to know that interest in the exhibition is increasing both among builders and accessory manufacturers. The results warrant the expenditure. With the prospects of increasing trade that is reasonably anticipated after the disappearance of the panic, there is a disposition among accessory manufacturers to make another good showing, even better than some of the great exhibits of recent years. The display of automobile parts and accessories will add much to the value of and interest in the exhibition. The lion and the lamb will fraternize the carriage and the automobile. The automobile parts display will stimulate the growing favor with which automobile manufacture is coming to be regarded by our industry. Builders can grasp in their minds' eye the easy steps to be taken to adjust themselves to the possibilities wrapped up in automobile building. The deep interest already shown in securing space augurs well for a big display and a large attendance.

Fixed at Last.

And at last the tariff is fixed, supposedly at least. The outcome is not what people expected, but if nothing happens and everything goes along swimingly there will be no trouble. But the masses of the people, especially the small manufacturers and dealers and middlemen generally, are suspicious. Bumper crops and high prices may keep the farmers quiet and orders galore to the small manufacturers and large ones, too, may induce them to conclude the tariff after all is all right. The country is hungry for goods and supplies. The vast hoards of idle money if let loose will furnish avenues for the outflow of energy and all may be well. But woe betide the tariff managers who have successfully sidetracked public expectation if something or anything happens to upset conditions and precipitate trouble.

Red Hickory.

Red hickory has had the ban removed by skillful tests and its use is now permissible without the danger of reflection that the user is using inferior material. This will lessen the strain and postpone the time when a wire fence will be built around the last hickory tree to preserve it. The experts are not yet through with their tests, and when they are it is probable that other woods will be found deserving of recognition where now they are debarred. The wood preservers have started in with renewed zeal to find some way to make woods now unfit fit to use for a number of purposes.

Fairer Rates.

Freight rates on carriage factory products has been always a subject of contention between builders and freight carriers. As long as the railroads waste-basketed all appeals of builders no progress was made. But of late, and especially within a year or two, the railway men have pulled their heels off their desks when carriage builders called. Mr. Luth, of Cincinnati, not so long ago read the riot act to them, and since then things have been better. The Michigan organization of shippers has been doing some good work. The railroad people are now not so rapid in fixing unfair charges, and it takes less talk to induce them to listen to reason.

The carriage industry can now rely on less interference with rate and a quicker response to appeads. This much has been gained and it is more than half the battle. The justice and recognition which has been secured has been the outcome of organization backed by determination.

TRADE PAPERS HELP TRAVELERS.

Tom Murray, the most original advertiser in Chicago and the most successful retail clothing merchant in that city, recently expressed his views on the value of trade papers and how they help the traveling salesmen. He said:

"In my store are signs that read, 'Matters not what your business is, I have time to listen,' consequently the traveling salesman has a standing invitation to come into this store. He can have a chat with me on business if he wants to. I will listen to what he has to say. The men at the head of each department will treat the traveling man with just as much respect as I do. But if I don't know the house he represents, at least by reputation, why then his task is harder than if I had heard something of his firm.

"Now, I read trade papers as I read newspapers—to get the news.

"The local newspapers give me the news of my city, and the world in which I live. I am much interested in both.

"But I make my living by selling wearing apparel to men, and I have a lively interest in whatever helps to bring in my living—and extras.

"So I take a number of trade papers and read them from cover to cover to get the news of the variuos branches that constitute my stock. And that's one of the ways that I learn about the manufacturers whose salesmen come to sell me a little bill of goods.

"If the manufacturer's advertisements have impressed me, his salesman gets a careful hearing, for I want to know more of the story the trade paper 'ad.' started to tell."

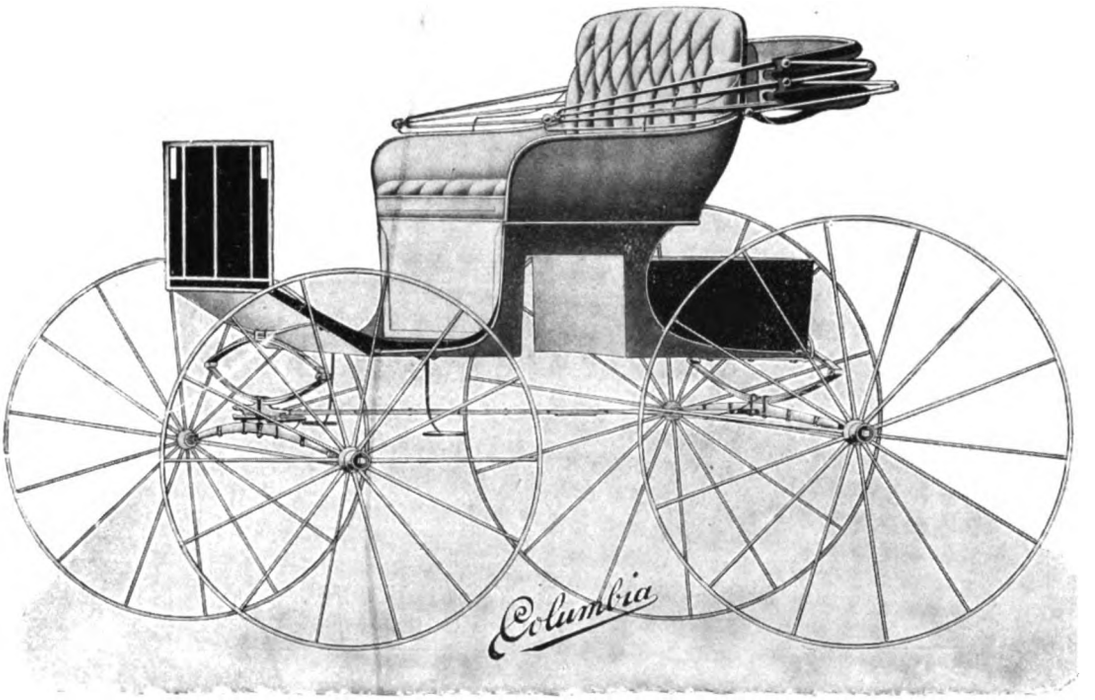
THE HORSE.

He who sees no beauty in the horse,
Nor e'er admires his speed upon the course,
Is doomed to see life's shady side,
And always should behind a donkey ride.
Who with a soul can look with a dormant eye
And view the trotting wonders as they fly,
Or see the mettled racers near the wire
With outstretched necks and eyes of flaming fire,
Without a tingle from his very toes,
To see which one first shoves in front his nose?
If such there be, why all I've got to say
I thank my stars I wasn't made that way.
Perfection in either man or beast
Is rarely found, I think, to say the least;
Say what you may, we kneel at beauty's shrine
And humbly bow before a form divine.
But more admired than beauty is the steed,
That shows the staying qualities and speed,
Endurance, muscle, speed and stamina,
Give us the far-famed winners of the day!
The calling of John L. we may despise,
Yet on his perfect makeup feast our eyes.
The horse endowed by nature for the race
Was not intended for snailing pace.
The draft horse, trotter, runner, each we find
Peculiarly constructed for his kind.
The All-Wise Power has so arranged the plan
That He can suit most any kind of man.
So he whose taste admits of nothing fast
Can have his ride behind a slow jackass.

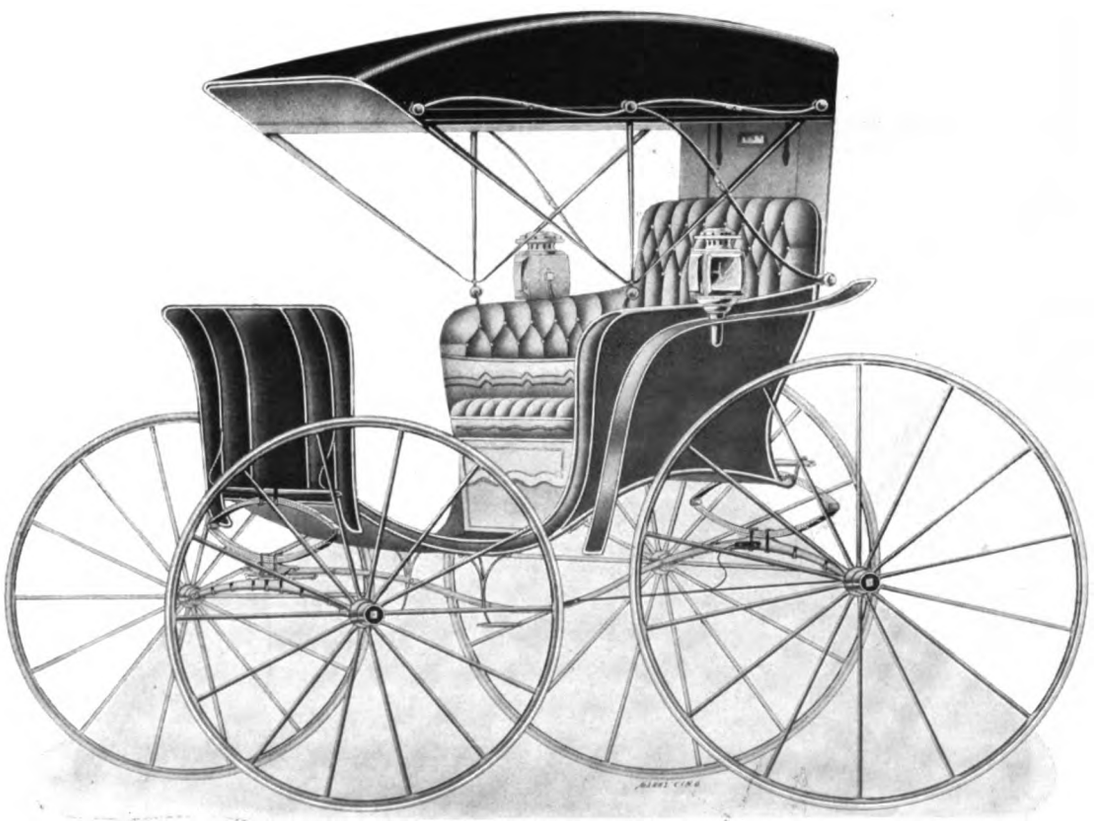
—Team Owner's Review.

Digitized by Google

Illustrated Carriage Section, September, 1909.

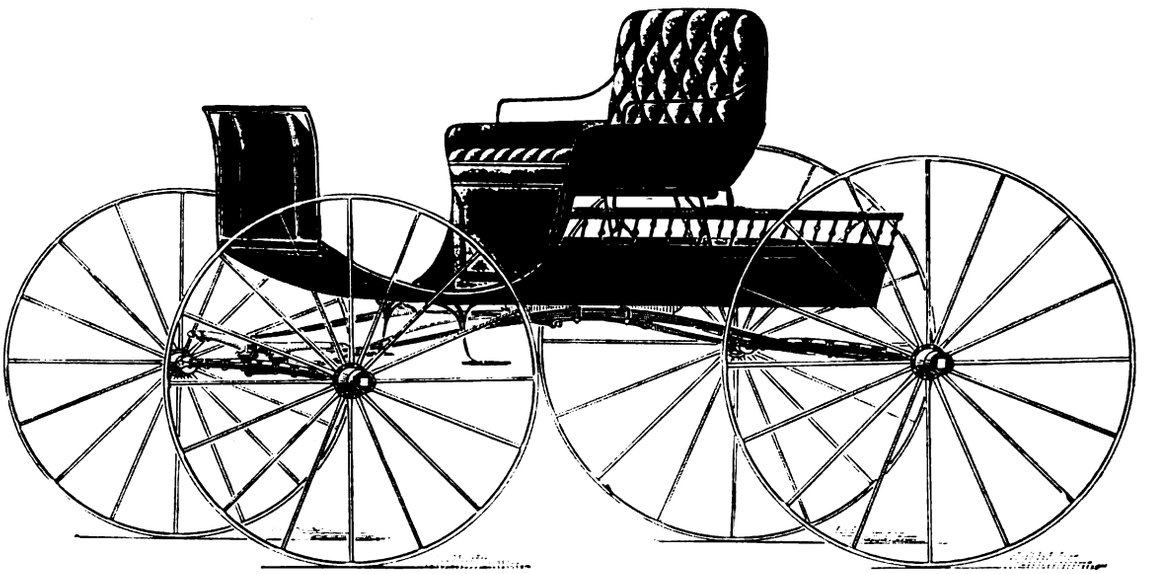


CUT-UNDER BUSINESS BUGGY.
Built by Columbia Carriage Co., Hamilton, Ohio.

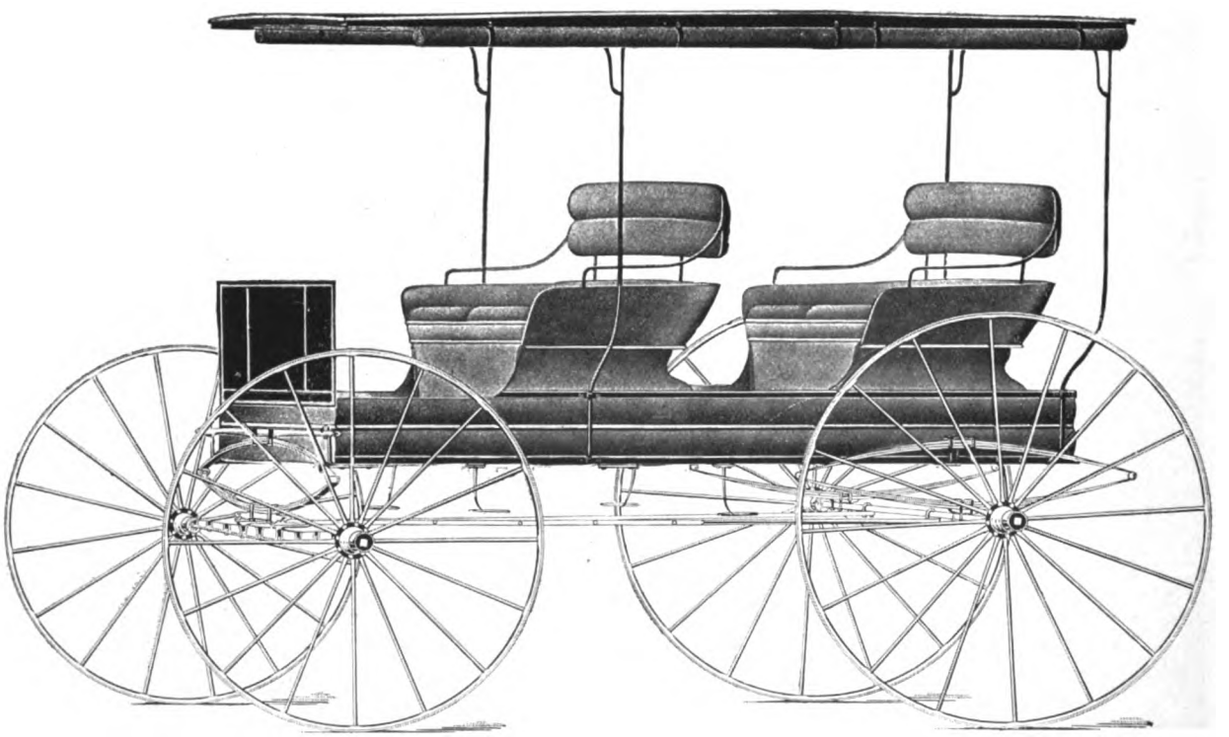


STANHOPE PHAETON.
Built by Ratterman & Luth, Cincinnati, Ohio.

Digitized by Google

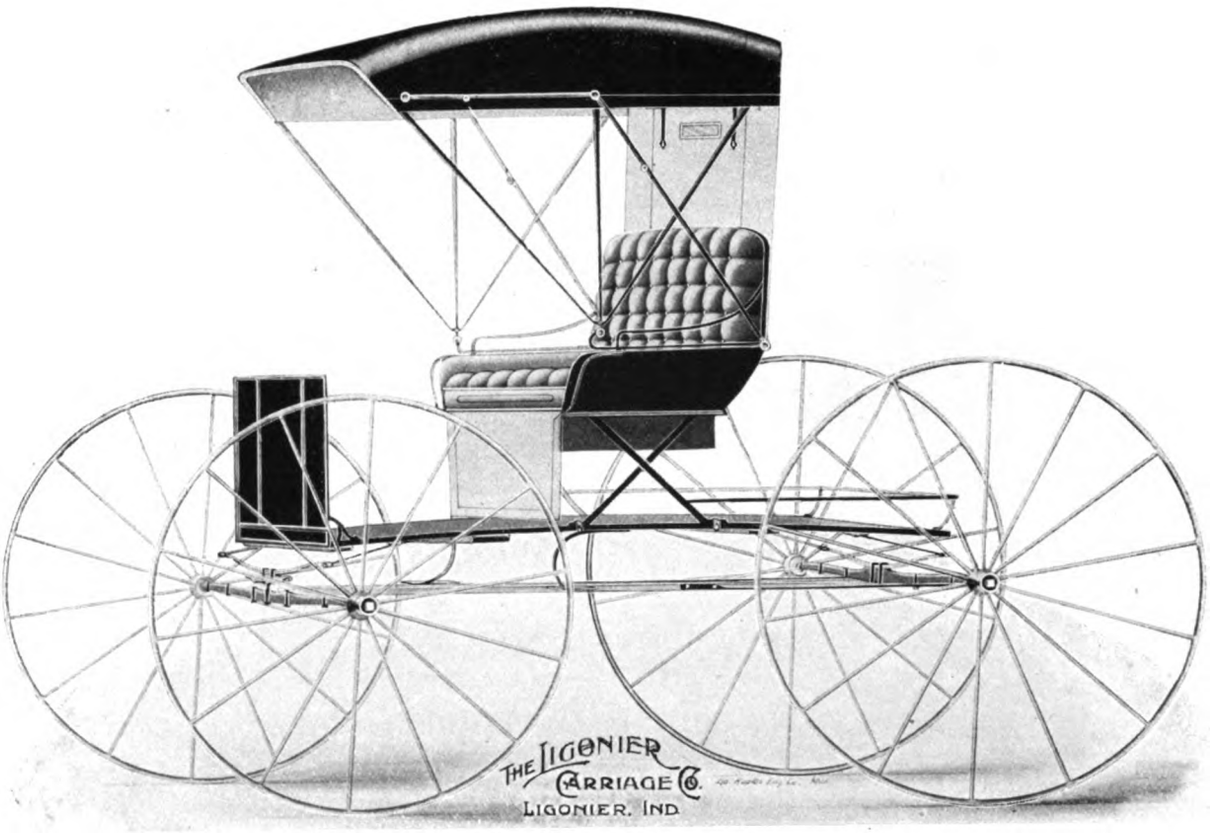


OPEN SPINDLE BODY RUNABOUT.
Built by The Jewel Carriage Co., Carthage, Ohio.

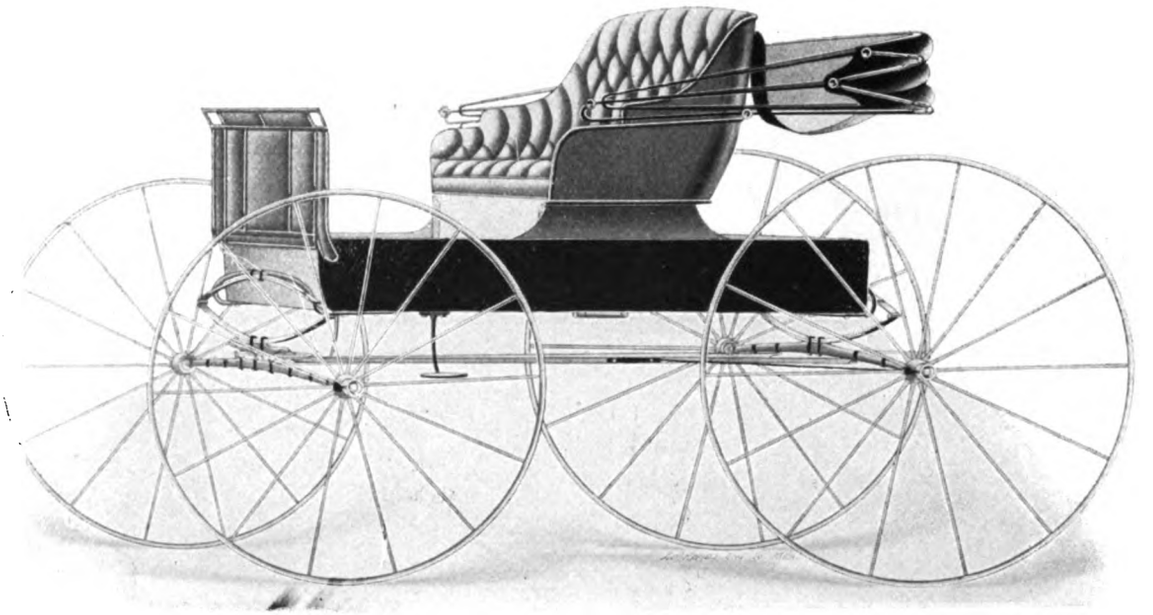


CANOPY TOP THREE-SPRING HANDY WAGON.
Built by The Gem Buggy Co., Carthage, Ohio.

Digitized by Google

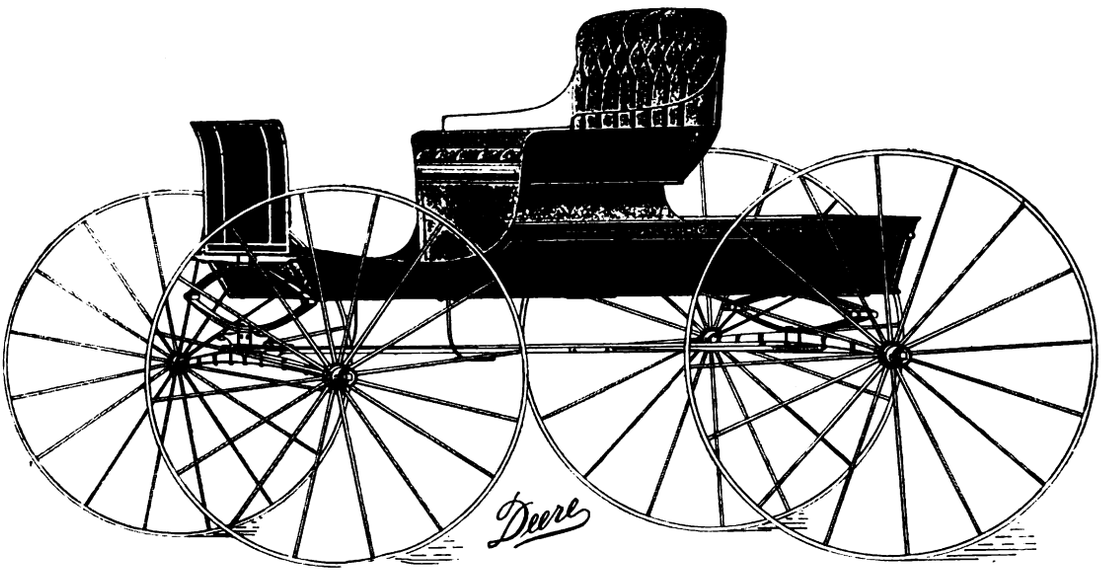


OIL WAGON WITH MULHOLLAND SPRINGS.
Built by the Ligonier Carriage Co., Ligonier, Ind.

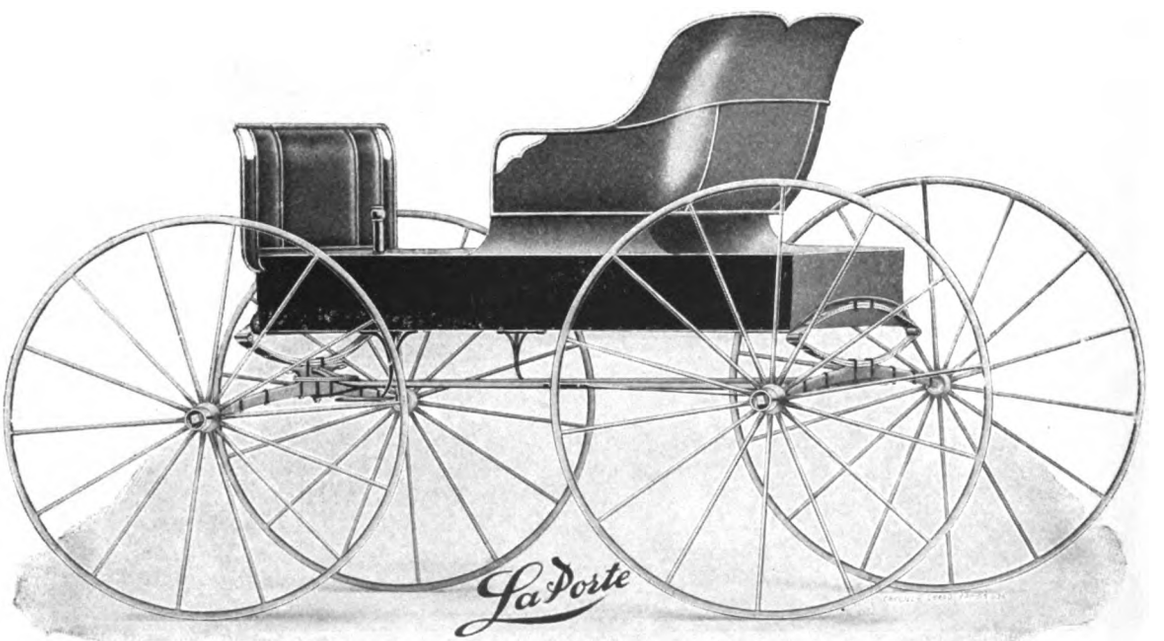


TOP BUGGY WITH AUTO SEAT.
Built by Lull Carriage Co., Kalamazoo, Mich.

Digitized by Google



LONG BODY ROAD WAGON.
Built by John Deere Plow Co., St. Louis, Mo.



DRIVING WAGON WITH AUTO SEAT.
Built by La Porte Carriage Co., La Porte, Ind.

Digitized by Google

C. B. N. A. CONVENTION DETAILS.

Office of the Secretary and Treasurer, Wilmington, Del.

August 16, 1909.

To the Members of the Carriage Builders' National Association:

The thirty-seventh annual meeting of the Carriage Builders' National Association will be held in Washington, October 19, 20 and 21, 1909. The annual exhibition of parts of carriages, wagons and automobiles; gears, wheels, springs, axles and materials used in their construction; harness, horse equipment, etc., will be held in the Convention Hall, Fifth and L Streets, beginning with Monday, October 18, and continuing through the week.

The building is well lighted, and is well adapted for exhibition purposes.

The business meetings will be held in the Arlington Hotel on the mornings of October 19, 20 and 21, commencing at 10 o'clock.

As Washington is so well known and has so many attractions, your committee considers it would be useless to call your attention to that city.

Washington being so well supplied with hotels, we have contented ourselves with calling attention to a few of them, where the price per day would suit almost all our members and the visitors.

The official headquarters will be at the Arlington Hotel, Vermont Avenue and H Street, opposite the White House. This hotel is conducted on both the American and European plans.

European Plan.—Single room, one person, $2 per day; single room, with bath, one person, $3 and $4 per day; double room, two persons, $3 and $4 per day; double room, with bath, two persons, $5 per day.

American Plan.—Single room, one person, $4 per day; single room, with bath, one person, $5.50 and $6.50 per day; double room, two persons, $8 and $10 per day; double room, with bath, two persons, $10 and $12 per day.

This is a very fine hotel, in a splendid location, and one of the best in that city.

Hotels on Both the American and European Plan.

Hotel Normandie, McPherson Square.—European plan: Single room, without bath, $1.50 per day upward; single rooms, with bath, $2.50 per day upward; double room, without bath, $3 per day upward; double room, with bath, $4 per day upward. American plan: $3.50 and $4 per day.

Metropolitan Hotel, 613 Pennsylvania Avenue.—European plan: Rooms from $1 to $3 per day. American plan: From $2.50 to $5 per day, each person.

National Hotel, Pennsylvania Avenue and Sixth Street.—European plan: Rooms from $1 to $2.50 per day. American plan: $2.50 to $4.00 per day.

Hotels on the American Plan.

The Ebbitt House, F and Fourteenth Streets.—$2.50 to $4 per day.

Riggs House, Fifteenth and G Streets.—For one person, room without bath, $3 to $3.50 per day; for one person, room with bath, $4 to $4.50 per day.

Hotels on the European Plan.

The New Willard, Pennsylvania Avenue and Fourteenth Street.—Single rooms without bath, $2.50 and $3 per day upward; single rooms with bath, from $3.50 to $4.50 per day upward; rooms without bath, for two persons, $4 per day upward; rooms with bath, for two persons, $5 per day upward; rooms with two single beds and bath, $5 and $6 per day upward; two connecting single rooms with bath, from $7 per day upward.

The Shoreham, Fifteenth and H Streets.—Single room without bath, $2 per day; single room with bath, $3 per day; double room without bath, $4 per day; double room with bath, $5 per day.

The Raleigh, Pennsylvania Avenue and Twelfth Street.—Single room without bath, 02 per day upward; single room with bath, $3 per day upward; double room without bath, for two persons, $3 per day upward; double room with bath, for two persons, $4 per day upward.

The Exhibition Hall can be reached within a few minutes either by the New York Avenue street car line, which runs within one block of the hall, or any of the Pennsylvania Avenue cars, changing at Fifth Street, and then going north.

Concessions in Rates.

Arrangements have been made with the New England Passenger Association, the Trunk Line Association and the Central Passenger Association, for the railroad rates on the certificate plan, one and three-fifths fare, plus 25 cents for each certificate issued.

The New England Association covers all New England and part of Canada.

The Trunk Line Association covers New York, Pennsylvania, New Jersey, Delaware, Maryland and most of Virginia and West Virginia.

The Central Passenger Association covers Ohio, Michigan, Indiana, most of Illinois and St. Louis.

The Western Passenger Association, as we have so few members in their territory, suggests that those within their limits buy their tickets to the nearest point of the Central Passenger Association and then get a certificate for the reduction granted by them.

Since the above was printed the Southwestern Passenger Association, covering the territory south of the Potomac and east of the Mississippi Rivers, has also granted us the reduction in rates under the certificate plan, one and three-fifths, the same as the other association named above.

The concession in rates, as granted, covers all relatives, friends of members and carriage builders who wish to attend the convention.

Reception and Annual Banquet.

The reception on October 19 will be at the Hotel Arlington from 8 to 11 o'clock p. m.

The annual banquet will be at the New Willard, Pennsylvania Avenue and Fourteenth Street, on Thursday evening, October 21, at 7 o'clock.

By order of the Executive Committee.

Henry C. McLear, Secretary.

DISPOSING OF AUTOMOBILES AND GOING BACK TO CARRIAGES IN MADRID.

Vice-Consul Maddin Summers, of Madrid, furnishes the following information concerning the use of automobiles and carriages in the capital of Spain:

For the last four or five years the use of automobiles in Madrid has almost overshadowed the carriage trade. Autos became fashionable, both for excursion purposes and for use in the city. It was argued that their running expenses would be less than the maintenance of horses and carriages. This, however, has proved a mistake, as far as Madrid is concerned, as repairs and separate pieces are very expensive, owing to high duties, freight, commission, transportation, etc., very much the greater number of the machines being of foreign manufacture. Then the price of gasoline is double what it is in France. The consequence is an automobile crisis, and many persons are selling their machines very cheaply to get rid of them, while the carriage and horse trade, on the other hand, is looking up.

There are practically no American automobiles and few carriages in Madrid, for the reason that intending buyers want to see the machine or carriage before purchasing, so that they may know exactly what they are buying. The principal foreign automobile manufacturers have branch houses here, with machines to show interested persons and teach them their mechanism. They also have on hand the separate pieces for repairs, etc., so that the purchaser knows exactly what he is buying.

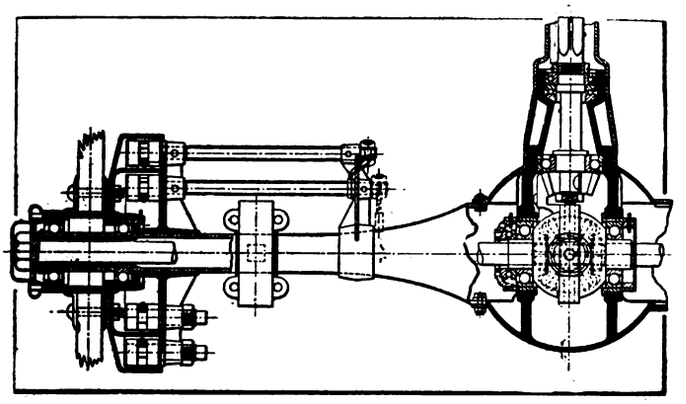
There is a large market here for American carriages, and in connection therewith a trade in saddlery and harness, but this can only be secured by good active agents, selected here, who must have a certain amount of goods always on hand.

Digitized by Google

THE NEW McCUE LIVE REAR AXLE.

Carriage and auto builders will be interested in a live read axle recently brought out by the McCue Company, of Hartford, Conn., which embodies a number of good features and shows careful designing, as will be noticed in the accompanying drawing.

The axle proper is of pressed steel welded laterally, with openings front and back. Apparently the two halves of the axle are exactly alike; this, of course, greatly simplifies the manufacturing. The propeller shaft is designed to be of the one-joint type, enclosed in the torsion tube; the rear end of this tube is expanded and bolts over the front opening in the axle, and the front end carries a forged steel yoke, to be hinged to the cross member of the frame. Thus none of the torsion strains are carried by the universal joint. The differential and bevel gear and pinion are carried on a frame inserted through the rear opening of the axle. The axle shafts are full floating, with hub clutches integral. Annular ball-bearings of ample size are used throughout, with separate self-seating thrust bearings. The spring seats may be made either to key on or to swivel. The rear hubs carry two sets of brakes, both internal expanding, on concentric drums of 10 and 14 inches diameter, respectively. The brakes are operated by means of camshafts, easily adjustable, and these are extended so as to bring the brake connections inside the frame. The axle is made in two sizes, for cars above and below 2,500 pounds weight.



EXCELLENT DESIGNING IS AT ONCE APPARENT IN NEW McCUE REAR AXLE

RAIL AND WATER RATES TO TEXAS ADVANCED.

The Texas City Steamship Company, operating in competition with the Mallory and Morgan lines from New York to Galveston, has advanced the rates on agricultural implements and wagons (carloads) from New York (ship's side) to Texas City from 20 cents to 25 cents per 100 pounds. The change took effect August 23. Some of the manufacturers in Illinois and other central States have been shipping carloads to Texas points via New York at a considerably lower rate than was available by all rail. This advance of 5 cents will still permit them to ship in this manner with a saving.

CARRIAGE BUILDERS' WIFE RUN DOWN AND KILLED BY AN AUTO.

A minute after telephoning to her husband downtown to bring home a basket of peaches to take on a trip to Effingham, Ill., Mrs. James M. McCabe, wife of the president of the McCabe-Powers Carriage Company, of St. Louis, Mo., on the afternoon of August 21 started to cross the street in front of her home, and was knocked down and killed by an automobile owned by B. F. Edwards, president of the National Bank of Commerce, and driven by Fred Bachofner.

ANNOUNCEMENT FOR FALL TERM OF TECHNICAL SCHOOL.

The classes in carriage and automobile drafting and construction, carried on under the auspices of the Carriage Bilders' National Association, will open on September 27 at 20 West 44th Street, New York City. Autumn term will close at Christmas. The winter term will open the first Monday after New Year's Day and close April 10, 1910.

Requirements for admission to the day or evening classes are: The applicant must be engaged in the manufacture of pleasure or business vehicles, and be 16 years of age or over; he must be able to speak, read and write English, to write a fairly good business letter, and have a knowledge of arithmetic, sufficient to solve problems in proportion, and also in square and cube root. Some knowledge of geometry is also desirable, but it is not required on entering. Examinations for admission will take place the two weeks preceding the opening of the term; or at such time as may be arranged, to accommodate distant pupils. These examinations will be conducted by the instructor, and will be held at the school rooms. Examinations will be both written and oral.

The day class is to accommodate pupils who wish to devote their whole time to the study of carriage drafting. This class will meet each week day, except Saturday, during the term. Hours from 9.30 a. m. to 4.30 p. m. Instruction is free.

The evening classes will meet on Monday, Wednesday and Friday from 7.30 to 9.30 o'clock. Instruction is free.

At the close of the term "Certificates of Graduation" will be given to such pupils of the day and evening classes as pass the necessary examinations.

Examinations will take place in the school rooms each year at the close of the winter term, and will be conducted by the Board of Trustees.

Instruction will be given by correspondence to the employes of carriage, wagon and automobile builders and members of the accessory trades at their homes by means of the so-called "Chautauqua System."

This system consists in giving instruction to out-of-town pupils through the mail by lesson paper on making free-hand, geometrical, scale and working drawings, each paper calling for responses in the form of hand drawings or written replies, which are afterward examined and corrected by the instructor, Mr. Andrew F. Johnson.

Three terms are required in order to complete the full course of corresponding lessons, which are 83 in number.

Ninety per cent of the graduates are holding good positions in the carriage and automobile trade, and the demand for men trained in the school is constantly increasing.

The school is better equipped than ever before to handle a large class. Last year the enrollment exceeded all previous records and it is hoped to do still more the coming season. The school now has over 1,100 square feet of blackboard space for making full-size drawings.

Students in the Technical School for Carriage Draftsmen and Mechanics may, if they choose, take up studies other than those taught in this school, such as the study of engine details, drafting of gasoline engines, electrical work, mathematics, etc.

These classes are conducted in the same building and the instruction is free. A special circular of information may be had upon application. For details as to courses of study in the Technical School for Carriage Draftsmen and Mechanics, address Andrew F. Johnson, instructor, 20 West 44th Street, New York City.

Petitioned Into Bankruptcy.—The H. T. Keyes Wagon Company, of Clinton, Mass., has been petitioned into bankruptcy by a number of leading creditors. Chas. Mayberry was appointed receiver. Insufficient orders to keep the plant in full operation is given as a primary reason of the financial difficulties of the company.

Digitized by Google

ENGLISH AND AMERICAN ARRANGEMENTS OF WOODWORKING MACHINERY.

I have been interested in the different methods of driving woodworking machines in America and here in England, says J. J. Atkinson in Wood Craft. The American method, judging from the illustrations given of different factories, seems without much variation to be from above, and results in a number of belts, in proportion to the number of machines, running from the overhead beams in lines perpendicular or nearly so. As it is quite necessary to have some of the machines in a pattern shop well away from the wall, it is equally plain that some of these belts must occasionally come in the way when long stock is being handled.

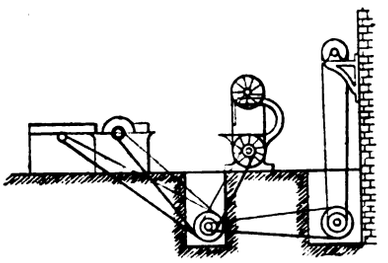
Overhead Space.

Belts, causing as they do a certain amount of draft, must also tend to keep in motion some of the fine dust from saws, lathes, etc., which is by no means a thing to be enjoyed. There is likewise the possibility of breakage with the consequent possibility of someone getting hit rather smartly when least expecting it, besides the danger of clothing and limbs getting caught with disastrous results.

Machinery Drives.

The system commonly adopted in England avoids all these troubles to a very large extent. Lathes are generally fixed along one side of the shop. In some instances they are driven direct from the overhead shaft by friction clutches fixed on the main shaft itself, thus avoiding countershaft pulleys, shaft and belt for each machine. At other shops the usual counter-drives are adopted for these machines (that is, lathes).

The larger machines, such as saws, band and circular saws,



Section Through an English Shop

planing and thickenessing machines, combination saw, and any other machine that is found useful for certain special work, are invariably driven in the following manner: A trench, or as many as are required, are cut in the floor of suitable depth, and built up with brickwork. A short countershaft is then fixed in the first trench with two pulleys, one to take the belt from the main overhead shaft, the other to drive the next countershaft farther away from the wall, whence the various machines are driven by suitable pulleys. These are sometimes operated by friction clutches and at others by another countershaft in a third trench. The latter is, I think, the more desirable method.

Trenches and Belts.

The trenches are protected by heavy wooden covers made in parts so as to be easily handled and also that too much opening may not be made to the inconvenience of workmen passing over this part of the shop when, for instance, a belt breaks or may need tightening. It will be seen from the diagram that this leaves the room quite clear overhead and interferes very little more with the floor space than is actually needed by the machines themselves. It altogether avoids the possibility of workmen getting caught by the belt, as movable wooden covers are always provided to guard the pulleys on the machines and the short lengths of belt that come up through the floor.

Some of these floor trenches are fitted up in the following manner: For every bearing bracket or standard that is fixed, a base-plate with machined slides is securely bolted to a concrete bed. This base-plate is of suitable length to allow the bearing standard to be moved a fair distance in the direction of the shaft. This, of course, allows of sufficient alteration in the position of pulleys that may be needed when additional machines are being fixed.

Electrical Equipment.

Though electric motors are used to a large extent as motive power, individual drives do not appear to be greatly favored here in England. The general rule is one or at most two motors for a fairly large shop. Individual motors would do away to a large extent with excavations for underfloor shafting and also enable each machine to be independent of any other. First cost is a great consideration with most firms.

Shop Equipment.

I have worked in shops here that boast a great number of woodworking machines, but the general variety consists of something like the following: Circular saw, combination saw, band saw, combined surfacer and thicknessing machine or separate machines, two or three center lathes of various capacities and one large face lathe, two or three No. 3 trimmers, and a number of bench trimmers. Mortising machines and dovetailing machines, though not generally included as they are not pattern-maker's machines, are often found, as all engineering works keep carpenters for something in that line that they do themselves. Electrical engineers, for instance, make a good many switchboard cases, especially for ships, these being for the most part of teak and dovetailed.

STARTING IN BUSINESS.

Many Advantages Accruing to Carriage Builders Who Take Up Motor Building at This Time.

Now that the motor car has been with us for a sufficient number of years for its most glaring defects to have been eradicated, and engineering practice in this direction to have reached a standard more or less, the motor body builder has certain advantages over his predecessors, should he essay to start in business at the present time. He will have their mistakes by which to profit, and be surrounded with all the various up-to-date accessories and ingenious devices which have been placed upon the market for the purpose of adding comfort and luxury to the mechanical road vehicle of to-day. The man who starts in business now is able to pick out those firms in the motor accessory trades with established reputations; in the past he might have been excused for being chary in dealing with some of the firms then in existence. He can also recommend a chassis with confidence, for those who have struggled through the ups and downs of automobile failure and success during the last few years have reputations which are by no means so easily ousted as when new types and makes of chassis were coming before the public almost daily. The accessories, such as tires, lamps, and electrical equipment, which are sold now accord satisfaction both to the buyer and seller, whereas there were occasions in the past when the factor had to bear a great deal of the blame for faulty and ill-designed goods, the real cause of the trouble, of course, being that experience in their manufacture was yet young, and more time had to elapse before the practical improvements which are now in evidence could be substituted for these former efforts. The taxicab has done much to open up new methods of cheaper construction, and has encouraged the hardware manufacturer to invent new processes for producing reliable, yet cheaper, fittings. The motor omnibus has shown to builders of commercial bodies where strength is required, and in what portions wear and tear are most likely to appear. Private cars which have done thousands of miles on the road, and have given good service during three or four years' strenuous work, have solved various problems for the body maker, mounter, smith, painter and trimmer. In the last three years the wind screen has been improved almost out of recogni-

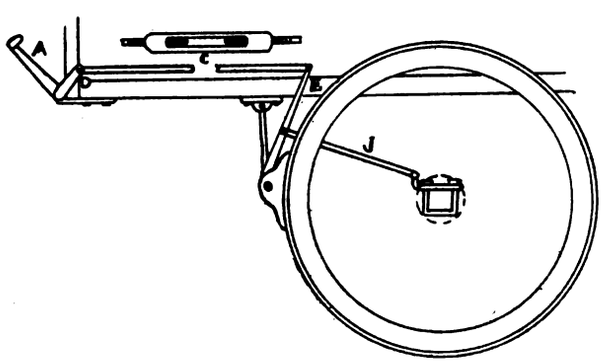
Digitized by Google

tion from the former patterns, the cape cart hood need no longer be an exertion for two people to deal with it, draught is properly excluded from driving seats, and bodies have been designed so as to reduce wind resistance to a minimum, thus economizing engine power and tires—factors which have also been aided by the better disposition of the body on the chassis, especially so far as the hind wheels are concerned. Another great advantage which the new firm would reap is that there is no stock of new and second-hand carriages to worry about. Taking it all round, therefore, the man who wishes to set up his own establishment now, can build up his business on a firm foundation, although he will find, necessarily, that there are others—many others—who have discovered the same position of affairs, and if he is to benefit by the experience of others, he must be prepared to fight the fierce battle of competition, remembering, if he will, that the presence of that competition is generally in itself an indication that there is something worth fighting for.—Automobile and Carriage Builders' Journal.

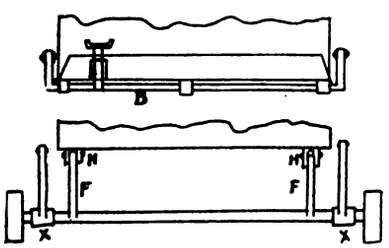
A POWERFUL BRAKE FOR HEAVY VEHICLES.

This style of break is especially for heavy vehicles. It is a very serviceable brake and if one will look carefully at the general lines, the great leaverage of this device can be quickly seen. The stock should, of course, be of such size and strength so as to be in keeping with the wagon. A light wagon need have but light material, while a heavy drag or cart will need material plenty strong enough to stand the biggest strain that is likely to be put on it.

To make the brake few directions will be necessary as the



illustrations are very plain. The foot lever A is either welded to the crossbeam B, or if preferred the lower end of A may be U-shaped with square inner corners to fit over a square on the beam. If this method of attach is used, a bolt and nut is necessary to hold the pieces in proper position. The rod C is in reality two rods conected by a turnbuckle. This allows for adjustment due to wear. The ends of the rods are arranged to pass on each side of the levers D and E, a good stout bolt being used to connect these joints. The lever E is of good heavy stock and forged as shown at XX, giving a wide bearing on



the beam brake beam. The hangers FF are welded solidly to the brake beam, but swing freely from the bottom of the wagon box at HH. The rod U is put on with clips as shown. The leverage produced by this arrangement is immense and with good heavy stock practically any load can be brought under control.

SALE OF PONTIAC BUGGY COMPANY.

To Be Moved to Rockford, Ill.—Emerson Carriage Company Successors.

A deal of considerable magnitude was recently consummated whereby a controlling interest in the Pontiac (Mich.) Buggy Co., a concern doing a business of nearly a million dollars a year, and recognized as one of the big carriage companies of the country, passes into the hands of the Emerson Manufacturing Company, of Rockford, Ill.

The transaction is the outgrowth of two important circumstances. One of these is that the Emerson Manufacturing Company has for the past two years been handling the carriages of the Pontiac Company in connection with the business of its sales agencies, its demands on the Pontiac factory amounting at the present time to a large proportion of its whole business. The other fact is that the owners of the Pontiac business have been engaged in the manufacture of automobiles as one of their lines; and that the latter has grown so as to demand the entire energies of some of the owners.

Because of this situation it has become possible for the company to remove its carriage manufacturing interests to Rockford; a major share in the ownership of the company passing to Rockford hands, as a joint interest with the Emerson Manufacturing Company.

The new company which has been incorporated to take over the business, the Emerson Carriage Co., will occupy the former plant of the Emerson Manufacturing Company, the buildings of which are located on both sides of Main Street, between the Northwestern tracks and the Illinois Central. The task of transferring the special machinery to Rockford is already under way. The removal of the business also takes to Rockford a number of owners of the Pontiac Buggy Company, as well as heads of the departments and a large number of skilled workmen.

The buggy company will begin business on as large a scale in Rockford as at present, and it is the company's ultimate intention to greatly increase the business. The tendency at present is toward a combination of the vehicle and implement business. Under the new management carloads of vehicles and implements can be combined and a great saving in freight rates to the dealer effected.

The Pontiac Buggy Company was organized in 1893 by E. M. Murphy, S. E. Beach and F. A. Emmendorfer, with a capital stock of $20,000. The present capital is $250,000.

C. S. Brantingham, E. P. and R. Lathrop are the incorporators of the Emerson Carriage Company which has a capital stock of $50,000.

DEALERS' CONVENTIONS.

The following convention dates have thus far been selected by retail implement dealers' associations:

Tri-State Vehicle and Implement Dealers' Association, at Cincinnati, O., October 26, 27 and 28.

Michigan Retail Implement and Vehicle Dealers' Association, at Flint, Mich., November 9, 10 and 11.

Virginia and North Carolina Retail Implement, Machinery and Vehicle Dealers' Association, at Petersburg, Va., November 17 and 18.

Iowa Implement and Vehicle Dealers' Association, at Des Moines, Ia., November 30, December 1, 2 and 3.

Illinois Retail Implement and Vehicle Dealers' Association, at Peoria, Ill., December 7, 8 and 9.

Retail Implement Dealers' Association of South Dakota, Southwestern Minnesota and Northwestern Iowa, at Sioux Falls, S. Dak., December 8, 9 and 10.

Wisconsin Retail Implement and Vehicle Dealers' Association, at Milwaukee, Wis., December 14, 15 and 16.

Minnesota Retail Implement Dealers' Association, at Minneapolis, Minn., January 4, 5 and 6, 1910.

Digitized by Google

SPECIAL TRADE NEWS FROM MICHIGAN

Newsy Notes by our Correspondent Concerning Well Known Carriage and Automobile Manufacturers in the Wolverine State.

Oakland Company Buys Pontiac Buggy Co. Real Estate.—Negotiations were concluded and a deal consummated for the removal of the plant of the Pontiac Buggy Co. from Pontiac to Rockford, Ill., a few days ago. The real estate and holdings of the buggy company were sold to the Oakland Motor Car Co. and possesion is to be given September 15. The buggy company hereafter, as stated elsewhere in this issue of The Hub, will be identified with the Emerson Mfg. Co., of Rockford. The buggy company embraces the Dunlap Vehicle Co., and all the buildings and land of both concerns are included in the transfer to the Oakland Company. A five-story building is to be erected at once, connecting the buggy company and the Dunlap factories. The Oakland will erect another big building between the two structures which now compose the plant. Ground for this building has been broken already, and when it is finished it will double the capacity of the plant. Seven thousand cars are to be built in Pontiac next season, and it is said that 1,000 men will be employed at the Oakland plant. A new Oakland "30," for those who desire a lighter car than the "40," will be produced next year in both the touring and runabout styles.

Receiver for Ionia Wagon Co.—At the request of President John Thwaites, of the Ionia Wagon Co., a receiver was appointed for that concern. The action caused considerable surprise in Ionia, for the firm, until a year ago operated by John F. Bible, was believed to be on a sound financial footing. In the petition Mr. Thwaites states that notes becam due which could not be met, because the present endorsers demanded the old endorsers again. C. J. Rumsey, a large endorser, refused to renew without that compliance. The asets are given as $400,000, with notes and open accounts of about $100,000. Gen. F. W. Green was named as receiver and will keep the plant running. Mr. Thwaites says that the receivership will be of short duration.

Will Move Marvel Plant to Grand Rapids.—Negotiations pending for some time between W. G. Hersig, of Nashville, Tenn., owner of the Harrison Wagon Works plant, and the Marvel Manufacturing Co., of Ionia, have culminated in the transfer of the title to the latter. The consideration is not named, but the purchaser will remove the business from the Ionia factory to Grand Rapids, the home of the Harrison plant, as soon as possible.

Unable to Supply Tremendous Demand.—The main drawback in the Michigan automobile trade is centered in the inability of the manufacturers to supply the tremendous demand. Many leading auto companies are planning or have already started enlargements, and thousands of cars will thus be added to the 1910 production.

Talk of Manufacturing Aeroplanes.—Talk is rife among certain automobile companies in Michigan about the practicability of combining to manufacture aeroplanes. A number of wealthy men are mentioned in connection with the plan, some of them residents of Detroit.

A. R. Welch, of the Welch Motor Car Co., for some time has been working on a model for an everyday aeroplane which he hopes will add something to the progress of the science of man-flight. The Welch apparatus, which can start from shelter under its own power, is planned to be driven by an ordinary automobile engine weighing about 600 pounds, which would bring the total weight of the machine up to 1,050 pounds.

A company is being formed in Holland, Mich., to exploit a new aeroplane invented by John Buchanan. It is a monoplane with a curved surface, from the center of which is suspended the entire power outfit and steering aparatus. Several Grand Rapids men are interested in the incorporation of the company, which is to take over the inventor's patent rights.

Paterson Making Big Plans.—The W. A. Paterson Co., of Flint, is preparing to engage extensively in the manufacture of automobiles next year at is plant in East Third Street, following the promising start which has been made by the company in that direction this year. An additional building, to be used for assembling purposes, will be erected adjoining the No. 3 factory building and fronting on Brush Street. The present plans of the company include an output of 1,200 cars next year, according to Treasurer W. R. Hubbard.

Feeling the Impulse of Auto Activity.—The Hess-Pontiac Spring & Axle Co. is the latest to feel the impulse of automobile activity in Pontiac. For several months the plant has been running night and day in an effort to fill the demands made upon it. Recently two now buildings were erected and were expected to take care of the company's growth, but expectations have been surpassed and the third building of reinforced concrete is to be erected. When the new buildings have been equipped the present working force of 200 men will be doubled.

Electric Will Compete With High-Powered Gasoline Cars.—For the first time in the history of the big automobile contests an electric car has been entered to compete with the high-powered gasoline steam vehicles. It is the Anderson Carriage Co., of Detroit, that has taken this forward step, having entered a Victoria type car, to be run in the Munsey tour between Washington and Boston, September 22 to 30. The car will be driven by Geo. M. Bacon, electrical engineer of the Anderson Carriage Co.

No Change of Management Under New Control.—Harry G. Hamilton, general manager of the Rapid Motor Vehicle Co., of Pontiac, will remain at the head of the plant under the control of the General Motors Co., it is understood, and the rest of the management's personnel, it is also reported, will remain unchanged. The General Motors Co. will start a big addition, 100 by 300 feet and two stories high, besides a new power plant and a new woodworking department. It is said that the working force eventually will be increased to 2,000 men.

Fifteen Acres Additional Floor Space.—The Rapid Motor Vehicle Co. is falling into line with new buildings at Pontiac which, when completed, will give it 15 acres additional floor space. The main building will be of concrete, 670 feet long and four stories high and will contain all the newest appliances. The company plans to construct 5,000 cars for 1910 delivery.

Packard Takes Out Building Permit.—The Packard Motor Car Co., in Detroit, has taken out permits for a 10,000 building to be erected on the south side of Palmer Avenue, between Concord and Bellevue Avenues. It is to be 320 by 80 feet, four stories high.

E.-M.-F. to Erect Two Buildings.—The Everett-Metzger-Flanders Co. has taken out two building permits agregating $75,000. Both of the new structures are to be built between Clark and Scotten Avenues. One is to be a three-story factory, 460 by 56 feet, to cost $50,000, and the other a three-story structure, 240 by 60 feet, to cost $25,000.

Digitized by Google

Grew Into an Automobile Factory.—The Multi Unit Gas Engine Co., of Chicago, has been absorbed by the new Gary Motor Car Co., of Muskegon. The former is the parent concern, but has grown into an automobile factory. The transfer of the stock to the Muskegon concern already has been accomplished.

Increases of Capital.—Continental Motor Mfg. Co., Muskegon, from $225,000 to $500,000; Weston-Mott Co., Flint, from $500,000 to $1,500,000; Regal Paint & Oil Co. Detroit and New York, from $100,000 to $200,000; Olds Gas Power Co., Lansing, changed name to Seager Engine Works, from $612,000 to $1,500,000; Imperial Auto Co., Lansing, from $125,000 to $150,000; Hanson Ward Veneer Co., Bay City, increased from $105,000 to $210,000.

New Incorporations.—Detroit Leather Dressing Color Co., $2,000; Detroit Metal Parts Co., $10,000; Griswold Motor & Body Co., Detroit, $5,000; Detroit-Dearborn Motor Car Co., $50,000, with Edward Bland of Detroit, and Samuel Lapham of Dearborn, as principal stockholders.

The best vehicle and implement display ever seen at a State fair in Michigan is promised for the one in Detroit from September 2 to 10.

Henry T. Ewald, after being feted by his friends, has left Detroit for his new position with the Studebaker Automobile Co., in South Bend, Ind.

The Michigan Wagon Manufacturing Co., of St. Johns, has just shipped a consignment of 30 wagons. About a dozen men are now working at the plant.

The Brush Runabout Co., of Detroit, has found its present quarters too small and has purchased a 20-acre tract on which it will soon erect four large factories.

Since his return from the Glidden tour, Bert Morehead, Detroit manager of the B. F. Goodrich Co., has been receiving congratulations on the victory of the Goodrich tires in the classic.

The Robbins Automobile Co., of Owosso, which recently suffered from fire, is getting ready to resume operations on a normal scale. Hereafter no gasoline will be stored in the building.

The Farmers' Handy Wagon Co., of Saginaw, has brought complaint before the Interstate Commerce Commission against the Pere Marquette and Chicago & Northwestern Railroads for $72, representing alleged overcharges on a shipment from Saginaw to Oshkosh, Wis., in September of 1907.

TRI-STATE VEHICLE AND IMPLEMENT CONVENTION.

Everything is progressing nicely in the preparations for the eleventh annual convention and exhibit of the Tri-State Vehicle and Implement Association, which will be held at the Armory Building, Cincinnati, O., October 25-30. Secretary Rathbun is indefatigable in his efforts to make the coming affair greater than any that have preceded it. At least 300 members have been added to the list since the 1908 convention. As usual, the exhibit of vehicles and implements will be an attractive part of the convention, and much of the space has already been arranged for.

FIRESTONE SIGNS, NOT TIRES.

The Firestone Tire and Rubber Co., Akron, O., call attention to the incorrect statements that have gone the rounds of the press, in regard to a Rapid truck which met with an accident near Chicago, delaying the Glidden Tour. It has been stated in a number of publications that this truck was loaded with Firestone tires. The fact is, says H S. Firestone, that it was loaded with Firestone signs, and had no connection whatever with the Glidden Tour.

BOOM ON AT MOLINE.

Unusual Prosperity of Manufacturing Demands More Housing Facilities.

A thousand more homes are needed at Moline, Ill., to accommodate increase in the working forces made necessary by improved business conditions. According to a local paper the vehicle line is in a great measure responsible for this condition. An inquiry was sent out to the local manufacturers by Major E. E. Morgan to obtain some idea of the outlook for inducing workmen to settle there and the following replies from those allied with the carriage and auto building and kindred lines make interesting reading:

Velie Carriage Co. and Velie Motor-Vehicle Co., by W. L. Velie.—We are putting up new factory buildings and within three months will have a force of close to 1,000 in the two plants; will run all year; business prospects never better; our business last year was very good.

Moline Plow Co., C. R. Stephens, secretary, and C. A. Banister, treasurer.—At the close of last year our business showed a large increase; we have started in several departments and will be running full force soon; we expect to increase our working force.

Deere & Co., by B. F. Peek, treasurer.—We have just closed a very busy year and expect to do as well if not better in the year ending in July, 1910; we expect to increase our working force.

Moline Wagon Co., by W. A. Rosenfield, president.—We have had a busy year and expect to handle a large volume next year and to employ more men; prosperity sure and lasting is coming; there is no excuse for men being out of work.

Deere & Mansur Co., by G. W. Crampton, secretary.—We handled a very large business last year; if crops are good we will increase our force 25 per cent; business at present is very good and we will soon be running in all depatrments.

Wright Carriage Body Co., by E. H. Wilson, secretary.—We are snowed under with work and are building a third floor to help out; we will increase in labor employed over 25 per cent in the new season.

Midland Motor Co., by A. E. Montgomery, manager.—Our business is growing very fast; our increase in labor employed will run 25 to 30 per cent; we will have a hard job to fill all our orders.

Williams, White & Co., by Harry Ainsworth, secretary.—Business in the last three months has been very large; prospects for future much better; will employ more men.

D. M. Sechler Carriage Co., A. T. McElvain, secretary, and W. J. Davis, manager.—Business last year very good; we are putting up new buildings to be ready for future business; we expect large increase next year and will employ more men.

Wilson-Moline Buggy Co., H. C. First, vice-president, and C. T. Guy, treasurer.—Business prospects much better than last year; will employ more men; very busy during last three months.

Moline Automobile Co., by Rufus Walker, Jr., secretary.—Are running sixty days behind orders; will run all year and increase labor employed at least 25 per cent; would do better if we had more room; cannot fill all orders.

Mutual Wheel Co., by G. W. McMaster, secretary.—We had larger business last year than in any previous year; if we had more factory room would increase at least 30 per cent; estimate increase at 10 per cent.

H. F. CARTWRIGHT TO BE MARRIED.

The hosts of friends of H. F. Cartwright, vice-president of the Banner Buggy Co., St. Louis, Mo., will be interested in the announcement of his marriage to Miss Stella Robertson, Mexico, Mo., which will occur early in October. The ceremony will be performed at the home of the bride. Mr. Cartwright expects to spend some time in California in the autumn.

Digitized by Google

INTERNATIONAL TRADE IN HIDES AND SKINS.

United States the Largest Importer—Germany a Close Second—India Leads the Exporting Countries.

The imports of hides and skins into the various countries of the world in 1906 amounted to 1,556 million pounds, of which 218 million were unclassified, being put down simply as hides and skins. Hides represent about three-fourths of the remainder. Hides of cattle are by far the most valuable part of this trade. Among skins the most important are goat, sheep and calf.

The world's trade in hides and skins, taking an average for the three years 1906, 1907 and 1908, so far as available, amounted to about 306 million dollars. It will be seen from the chart, says John J. MacFarlane in Commercial America, that among the countries importing hides and skins, the United States ranks first, having nearly one-fourth of all the imports. Germany is a close second, so that these two countries together buy nearly half of all the hides and skins exported from other countries. Great Britain ranks third with 35 million dollars' worth, but as it re-exports one-half of this amount, it can hardly be considered as third in importance in the consumption of foreign hides and skins. The United States and the leading manufacturing countries of Europe take nearly all the hides and skins entering into the foreign trade.

Imports Into the United States.

The import trade of the United States during the present fiscal year, ending June 30, is greater in quantity than in any preceding year, and the value is only slightly less than that of the high year, 1907. How important the United States is to the countries producing hides and skins can be judged from the fact that since 1884 one billion dollars' worth of this class of merchandise has been imported into the United States, of which nearly 400 million dollars' worth was goatskins.

Taking the values for 1907, when the total for hides and skins amounted to 83 million dollars, we find this divided into 31.7 million dollars' worth of goatskins; 20.6 million of cattle hides, of which 2 million consisted of buffalo hides; 18.5 million of calfskins; 13.6 million of sheepskins. In addition to these there were kangaroo, horse and ass, alligator, deer and others of less importance. Of this enormous amount all are admitted free except hides of cattle, on which there is a tax of 15 per cent.

United States Takes Two-Thirds of the World's Goatskins.

The goatskins imported into the United States in 1907 amounted to 101 million pounds, or nearly two-thirds of all the goatskins exported from the various countries in which goatskins are raised. The following table will show the relative importance of the various countries in supplying the United States with goatskins. With the exception of Great Britain, these are generally their own product:

	Quantity. Millions of pounds.	Value. Millions of dollars.
India	32.2	10.1
China	10.7	3.3
Russia	7.8	1.8
Mexico	7.5	2.8
France	6.5	2.2
Aden	4.3	1.6
Great Britain	4.2	1.0
Argentina	3.9	1.4
Brazil	3.2	1.9
Morocco	2.6	.6
British Africa	2.0	.6
Austria	1.9	.6
Turkey in Europe	1.7	.5
Venezuela	1.5	.4
Turkey in Asia	1.3	.4
French Africa	1.0	.2
All other	8.5	2.3
Total	101.2	31.7

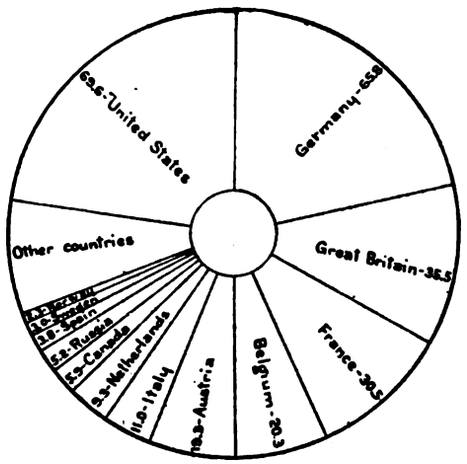
The number of goatskins exported from all countries amounts to about 75 million annually. Of these, India exports 25 million; China, 9 million; Aden 3 million, and South Africa, 2½ million. More than one-half of the world's goatskins are exported from these countries.

There was a great falling off in 1908 in the total value of hides and skins imported into the United States, but the eleven months of the fiscal year of 1909 show that this has been more than made up. In the case of cattle hides, the value is double what it was in the fiscal year 1908, and the quantity of hides imported in the eleven months of 1909 was 170 million pounds, which is greater than in any preceding year.

The hides and skins imported into the United States from foreign countries form, apparently, about one-third of the value

HIDES AND SKINS.

Imports into Leading Countries—1908. Total Value, $306,000,000.



Values by Countries in Millions of Dollars.

of the materials of this character used in the manufacture of leather in the United States. According to the census of 1905 the value of the hides and skins used by the leather-producing industry of the United States in 1904 was 145 million dollars. The value of the hides and skins imported during the census year was 57.5 million dollars, or a little more than one-third of the total value of the hides and skins used.

Exports of India and Other Large Hide and Skin-Shipping Countries.

In the chart of exports of hides and skins, India ranks first, exporting on an average 95 million pounds of hides, valued at 17 million dollars. It also exports 42 million pounds of goatskins, valued at 11 million dollars, the balance being made up of sheep and other skins. Of the hides, 36 million pounds went to Germany, 12 million to Austria, 10 million to Italy, 10 million to the United States, and 5 million to Great Britain. Of the goatskins, 90 per cent went to the United States; and of the sheepskins, over one-half.

Second in rank among the exporters of hides and skins is Great Britain, but this is only because of its large re-exports of foreign hides, which amount to 17 million dollars' worth. Great Britain re-exports nearly all the goatskins which it obtains and a very large part of the sheepskins, mainly to the United States, so that strictly speaking, it should not be ranked high as an exporter of hides and skins. If only its own product was considered it would rank below the Netherlands .

France, ranking third, exports 66 million pounds of large hides of all kinds, 27 million pounds of calfskins, 11 million pounds of sheepskins, and 6 million pounds of goatskins.

Argentina exported 118 million pounds of hides in 1907, of which 33 million pounds were sent to Germany, 26 million to the United States, and 22 million to Belgium. It also exported 53 million pounds of sheepskins, of which 44 million were sent to France, and 3 million pounds of goatskins, entirely to the

Digitized by Google

United States and France, the former receiving the largest amount.

Germany exported 136 million pounds of hides and skins in 1908, of which 93 million were cattle hides; 22 million, calfskins; 12 million, horsehides; 5 million, sheep, and 3 million, goatskins.

The value of the hides, including cattle and calfskins, exported from Russia amounted to 9 million dollars, and that of goat and sheepskins to 6 million. Of the hides, 62 per cent were sold to Germany and 13 per cent to Great Britain. Fifty-four per cent of the goat and sheepskins were sold to Germany; 18 per cent to Great Britain, and 10 per cent to France.

In 1908, Belgium exported 113 million pounds of hides and skins, one-third of which was bought by Germany and one-tenth each by the United States, France and Great Britain. There is no classification made to distinguish hides from skins in Belgian statistics.

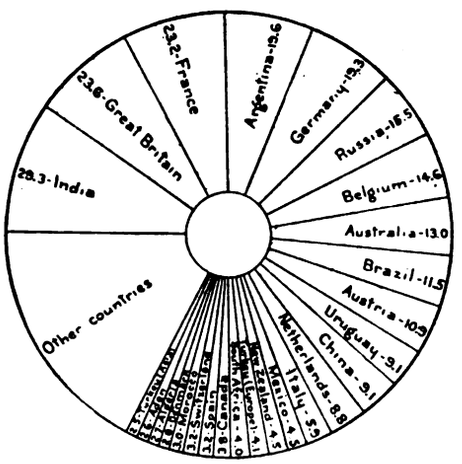
Australia exported 148 thousand hides, mainly to Great Britain, Germany and Belgium. It also exported 6 million sheepskins, mainly to France and Great Britain. In 1908 the exports of hides increased 40 per cent, while that of sknis decreased 30 per cent.

Of the exports from Brazil, 9 million dollars' worth consisted mainly of hides and 2 million of goatskins. The hides were sold mainly to Europe and the goatskins to the United States.

Austria exported 63 million pounds of hides and skins, 25 million of which was cattle hides; 23 million, calfskins; 4 million, horsehides; 4 million, goatskins, and 6 million, sheepskins. Owing to the location, it imports large quantities of sheep and goatskins from Turkey in Europe and Asia. One-third of all its imports of hides and skins came from Germany and two-thirds of all the exports were sold to Germany.

HIDES AND SKINS.

Exports from Leading Countries—1908. Total Value, $306,000.000.



Values by Countries in Millions of Dollars.

Three-fourths of Uruguay's exports consist of cattle hides and one-fourth of sheep. China exports large quantities of goatskins as well as some cattle hides. Three-fourths of Mexico's exports are cattle hides and one-fourth goatskins, which are sold mainly to the United States.

New Zealand exported 182 thousand cattle hides and 162 thousand calfskins mainly to Australia, and about 7 million sheepskins, mainly to Great Britain. Turkey in Europe, as well as Turkey in Asia, is a large exporter of goatskins. Owing to the absence of detailed statistics it is impossible to analyze the exports from Turkish countries.

South Africa is a large exporter of goatskins. This is true also of Morocco, Algeria and Aden, the latter sending nearly all to the United States. Canada's exports consist almost entirely of cattle hides and calfskins.

The values of the exports of hides and skins from minor countries is as follows, values being given in millions of dollars: Dutch East Indies, 1.9; Colombia, 1.9; Sweden, 1.8; Venezuela, 1.8; United States, 1.5; Norway, 1.3; Tunis, 1.3; Portugal, 1.2; Straits Settlements, 1.2; Madagascar, 1.1; Cuba, 1.0; Chile, 1.0; Egypt, 1.0; Greece, 1.0; Servia, 1.0.

From the analysis of the export trade of different countries some idea of the sources of hides and skins can be obtained. As these products are used entirely in the manufacture of leather, naturally their trade is with the principal leather manufacturing countries, and, as we have already seen, the United States and Germany consume about one-half of these products. In the chart of imports the relative importance of the various countries is shown. No analysis is made of the kinds of hides and skins imported, as that is practically given in treating of the export trade. In addition to its large imports, the United States has an enormous supply of cattle hides from the ranches in the West, and while no tariff was laid on other skins, those interested in the production of hides contended that it was necessary for the farmer that a tariff should be laid on this class of goods. On the other hand, however, the leather and boot and shoe industries claimed that a reduction in tariff would increase the interchange of products with hide-producing countries, and enable them to sell their leather and boots and shoes to greater advantage in foreign lands.

SECRETARY McCULLOUGH ON GOOD ROADS.

"There is one thing to be said about the West," said E. W. McCullough, Chicago, Ill., secretary of the National Wagon Manufacturers' Association, and who is at present in Portland on a vacation trip. "That is, the progress made here is simply wonderful. It is what you are always saying, and it's true. As I have only arrived, I have not seen much of Portland, but I notice a great improvement in the shipping front of the city."

Mr. McCullough believes that one of the most important factors in the development of Oregon—or of any State—lies in good roads.

"Nothing can advance the value and reduce the hauling of all products more than the improvement of roads. Look at the Government reports on the cost of hauling in various States, and you will at once see the advantage those States having improved roads possess over those which have given the subject as yet little attention.

"If every township would invest in good road machinery, and make a business of building a certain amount of good roads each year, the actual benefits would be beyond all expectation.

"The importance of good roads in the transportation of fruits—the condition of the product when it reaches market being so highly essential—will be readily seen. Not only is it necessary that vehicles for transportation be the best, but also that the roads be in good condition, so that the loss and damage resulting from vibration be reduced to a minimum."—Portland (Ore.) Journal.

CLAIM FOR 20 CENTS DAMAGES.

The smallest claim for reparation ever filed with the Interstate Commerce Commission at Washington, D. C., was presented August 20 by the Tyson & Jones Buggy Company, of Carthage, N. C. The amount involved is 20 cents.

The brief consists of six pages of legal cap in which all the facts in the case are set forth at length. In December, 1907, the complaint avers, the firm ordered some iron wagon axles from Wilkesbarre, Pa. The rate charged was 54 cents a hundred pounds. The complainant says that the proper rate should have been 52 cents a hundred. The shipment weighed about 1,000 pounds.

Six railroads were made defendants in the case, the Central of Georgia, the Philadelphia and Reading, the Cumberland Valley, the Norfolk and Western, the Southern and the Aberdeen and Asheboro.

Digitized by Google

Among the Manufacturers

Wagon Company Doubling Capacity.—The Linstroth Wagon Co., 2622 Chouteau Avenue, St. Louis, Mo., will make extensive additions to its plant. The addition will adjoin the present building on the west and will be a three-story brick structure with a frontage of 50 feet. It will nearly double the present capacity of the factory and is made necessary by growing business. The work of excavation has already begun and the building will be completed before the first of the year.

Moving in Part to Amesbury.—The Walker Carriage Company, of Merrimac, Mass., having outgrown its present plant in that town, has decided to move a part of the business to Amesbury and has leased the old Clarkson Building on Elm Street, where auto bodies, both wood and metal, will be made. H. P. Wells is to be superintendent of the new plant which will be run in conjunction with the one in Merrimac.

A. A. Cooper Wagon Company Entertains.—The A. A. Cooper Wagon Company, of Dubuque, Ia., entertained over fifty of the employes of the concern at a camping party during the week of August 9 near Gutenberg. The event was one most delightful and the members of the party are most pleased with the memory of the happy time given them by the firm.

Now a Firm by the Same Name.—The Davenport (Ia.) Wagon Company has been succeeded by a partnership of the same name. The partnership has received all the assets and assumes all the liabilities of the corporation, and the same persons who were interested in the corporation will remain interested in the partnership. The capital of the partnership will be the same as that of the corporation. The names of the partners are J. L. Hecht, Geo. T. Baker, A. W. Vander Veer, G. Watson French and Nathaniel French. J. L. Hecht will continue to be the manager of the business.

New Vehicle Factory for Birmingham, Ala.—It is announced that O. L. David will at once begin the construction of a factory for the manufacture of wagons and buggies and other vehicles at Birmingham, Ala.

They Come High.—The Hercules Buggy Co. will erect a smoke stack for its factory at Evansville, Ind., which will be 100 feet high.

A Fat Fee.—The United States Court at Peoria fixed the fee of Judge Black, of Pekin, and Judge Wislow Evans, of Peoria, counsel for Receiver Chas. Duisdieker and T. & H. Smith & Co., at $5,000 for services in connection with the Smith Wagon Works bankruptcy proceedings.

Reorganized Company Doing Prosperous Business.—According to an article in a local paper the Keystone Vehicle Co., successors to the Keystone Wagon Co., at Reading, Pa., is doing an unusually prosperous business. The company has over 200 hands on its pay rolls, and several departments of the plant are working overtime. Nearly all of the old hands of the Keystone Wagon Works are employed and many new ones.

Will Move to New Quarters.—The Pitt Carriage Company, of Des Moines, Ia., will move from its present location, 120 Eighth Street, to a new building on East Third Street, near Court Avenue, on October 1. The building into which they will move will be a modern three-story factory of brick and concrete.

Miller to Produce Cars at Defiance.—The Miller Machine Co., of Defiance, O., which heretofore has been identified with the automobile industry only through conducting a garage, has commenced the manufacture of cars. The old Defiance cycle factory has been taken for the machine work, while the bodies will be made by the Defiance Carriage Co. The model at present being put out is styled the Defiance "40," and is a vehicle of the touring car type.

Will Build Autos.—The Middletown (O.) Buggy Co. will build auto delivery wagons. The company is now engaged in building two machines, which will soon be completed. One is a light delivery wagon, with a 15-horsepower engine, and the other is equipped with a 30-horsepower engine. The company claims to be very busy in its buggy department.

Moline's New Pole and Shaft Company.—Final details for the erection of a factory building at Moline, Ill., to be used by a corporation recently formed, to be known as the Moline Pole and Shaft Company, were completed by J. B. Finley, of Parkersburg, W. Va., eastern representative of the concern, and local stockholders. The building will stand on ground owned by the Channel Ice Co., on Twenty-fifth Street, near the river. Work is to be commenced at once and the building will be completed and ready for occupancy by October 1.

Behlen's New Car.—The Charles Behlen's Sons Co., the Cincinnati carriage builders who recently added automobiles to their productions, have their car, styled the Behlen, well advanced. It is a four-cylinder runabout listing at $1,500. It is rated at 24-30 horsepower, has shaft drive, Remy magneto ignition, 102-inch wheel base, and 34-inch wheels, carrying 3½-inch tires.

Will Devote All Its Time to Autos.—The Westcott Carriage Company, of Richmond, Ind., has decided to devote all of its time to the manufacture of automobiles. On October 1 the company will discontinue the manufacture of horse vehicles and begin enlarging its operations in the automoible field. The company has petitioned the court for permission to change its name to the Westcott Motor Car Company.

Spring Manufacturers Busy in Newark.—Manufacturers of carriage and wagon springs in Newark, N. J., report a great deal of activity. The plant of L. Delany & Son, in Liberty Street, is very busy just now turning out large quantities of heavy springs for wagons. Some of the factories are also frequently receiving orders for automatic springs for replacements. Motorists in some instances find it less expensive and more convenient, as well as time-saving, to replace a broken spring by one made in Newark rather than sending to the place where the car was made for the new part.

Wintons Planning New Building in Seattle.—What is claimed will be the finest automobile plant on the Pacific Coast is being planned by the Winton Motor Carriage Company for Seattle. This will be erected at Pike Street and Terry Avenue, of steel and concrete, 80x120 feet. It will have six stories, two below the street level and four above. The building will be ready for occupancy on January 1. The entire structure will be used by the Wintons.

H. H. Babcock Plant Working Longer Hours.—Shifting from an eight to a ten-hour day the H. H. Babcock Carriage Company, at Watertown, N. Y., recently consolidated, has begun its career with a promise of considerable activity. Bids are being received for altering the plant formerly occupied by the Watertown Carriage Co. into a finishing plant factory for the automobiles and carriages. But two touring cars will be turned out this fall. These cars are built as an experiment, the regular output of the company being judged by the success with which

Digitized by Google

these cars meet. Mr. Mills says that work will soon be under way for the spring output, and that 100 cars will be on the market early in 1910. These are the five-passenger touring cars which will sell at $2,250. Preparations are being made for the employment of a large force of skilled mechanics at the works.

Stearns' Addition Must Be Completed September 15.—Work is being rushed on the new four-story brick and concrete addition to the F. B. Stearns factory in Cleveland, O., which must be finished and machinery running by September 15, under a forfeiture of $100 a day. The Stearns factory has been badly cramped because of lack of room, the machine and forge shops being particularly hard pressed. The new addition, 120 by 180 feet, will materially aid the production department.

To Specialize in Auto Bodies.—The Carriage Woodwork Company, of Hamilton, O., has announced its intention of making a special feature of its work in automobile bodies. It has engaged William Cheetham, formerly of Detroit, to take charge of the construction department and to turn out both wood and aluminum bodies. Mr. Cheetham has had large experience in this line.

Neely & Ensor Make Big Purchase.—The United Railways and Electric Company, of Baltimore, Md., recently sold the car barn located at the intersection of Mount Royal Avenue and McMechen Street, with frontage on Mount Royal Avenue of 165 feet and a regular depth of 202 feet, containing 33,330 square feet, to Neely & Ensor, the carriage builders, of 812 Madison Avenue, for $50,000. The purchasers will establish a carriage factory where they will build automobile tops and bodies and do a general painting, trimming and repairing business.

Raising the Roof.—The Wright Buggy Body Co. at Moline, Ill., has been so badly in need of room that it has been necessary to raise the roof and insert another story. An additional building in the near future is talked of.

Very Busy in York, Pa.—The York Carriage Company is running 55 hours a week and is employing about 185 people, reporting an increase in business over last year of 25 per cent. The Martin Carriage Works is running full time, employing about 300 men. P. A. Elsesser states that the firm has had a substantial increase of from 15 to 20 per cent. It now employs about 300 men, working full time or about 60 hours a week. The Hoover Wagon Company reports running full time and an increase of about 10 per cent. Last year this firm ran from 45 to 50 hours per week.

Will Take Charge of Auto Trimming Department.—William G. Sullivan, who has for many years been employed at the S. C. Pease & Sons carriage manufactory, at Merrimac, Mass., has accepted the position of foreman of the trimming department of the Packard Automobile Company at Detroit, Mich. Mr. Sullivan will be in charge of a force of about 150 skilled mechanics.

Purchased Hard Timber Tract.—The Fort Smith (Ark.) Wagon Co., a branch of the John Deere Plow Co., purchased 795 acres of hardwood timber land in Arkansas. The land is situated along the Memphis, Paris and Gulf Railroad in the Saline and Little River bottoms in Howard, Sevier and Little River Counties. Mills will be constructed along the line of the railroad for the purpose of cutting this valuable timber.

Owing to the unsatisfactory qualities of the best glue available manufacturers of certain lines of work are using a substitute which is a composition of pitch and wax. It is stated this composition never hardens the leather to which it may be applied, but remains pliable and firm. The composition is melted in a glue pot and the proper proportions can be determined by experiment. It is made hard or soft, according to the proportion, and either white or yellow wax may be used.

DISASTROUS FIRE IN CANADA.

The Big Tudhope Carriage Factory at Orillia, Ont., Completely Destroyed.

The large carriage factory of the Tudhope Carriage Company, at Orillia, Ont., employing over 200 skilled mechanics and enjoying a coast-to-coast reputation, was deseroyed by fire on August 21. As the men were off on the usual Saturday half holiday the flames gained great headway before the alarm was given. The buildings were burned to the ground. The insurance amounted to $235,000, and the plant and stock on hand was valued at least $450,000. All the lumber in the yard, some iron, one or two small outbuildings and some wheels, and other parts of buggies, cutters and autos were saved.

The carriage factory of J. Brennan, at Ransomville, N. Y., was destroyed by fire.

SWINEHART CO. ELECTS OFFICERS.

The Swinehart Clincher Tire & Rubber Company, Akron, O., announces the following officers, elected at the stockholders' meeting held August 23: President, J. A. Swinehart; vice-president and general manager, W. W. Wuchter; secretary, C. O. Baughman; treasurer, R. A. May.

J. A. Swinehart, president, will devote his time to the company's European interests, sailing about October 1.

Mr. Wuchter, who has been general superintendent of the Firestone Tire & Rubber Company for the past five years, will assume the active management of the company's affairs, and it is the present intention to eventually embark in the manufacture of a pneumatic tire now being developed, and to carry on a more extensive selling campaign as their facilities for taking care of business are increased.

For some time past the demand for their solid tires has exceeded their capacity to fill orders, but the entire capital stock of the company has now been sold and immediate steps will be taken to improve their equipment and enlarge their capacity.

They are at present developing and thoroughly testing out an improvement in their solid commercial tire equipment, which promises to still further add to the popularity and long service of Swinehart tires, and which they will be ready to announce to the public in the near future.

MERGER OF CANADIAN CARRIAGE COMPANIES EFFECTED.

A merger of the principal carriage factories of Canada has been formed. It is to be a holding company with $4,000,000 capital, of which $2,000,000 is common stock and $2,000,000 preferred. There is to be a bond issue as well.

It is understood that the chief aim of the new corporation is to bring about an economy of operation amongst the various factories involved in the coalition. This is to be effected by the standardizing of output, etc. The merger has been brought to a successful completion by Mr. Garnet R. Grant in conjunction with Messrs. J. A. Mackay & Co.

It is said that the merger is receiving support from strong local financial interests.

The Montreal Witness interviewed Mr. W. M. Weir, of J. A. Mackay & Co. to ascertain the correctness of the above asertions. Mr. Weir confirmed them, but was disinclined to give any further information.

RUST PREVENTION.

A rust-preventing coating for iron, used by a German manufacturing company, consists in coating iron and steelware first with lead, then electrolytically with zinc, and finally heating this coating, so as to obtain an alloy of the two metals which has the same potential as zinc.

Digitized by Google

PAINTING THE ARTICLE OF COMMERCE.*

There is in practically every factory at least one "white man's burden" department. This is the branch of the work that is always under the suspicion of not paying for itself, let alone produce any profit. And yet it is supposedly and logically a productive department—one actively and definitely engaged in the actual work of production, and for that reason expected to exhibit its proportion of profit.

Such departments as these are especially evident in establishments where production is comparatively small as to quantity but important as to cost. The daily output of a score of articles, valued at several thousand dollars each, gives far greater opportunities for heavy departmental costs than does the concern where the manufacture runs into thousands, but where the individual cost is incidental. This remains true where both houses are equally well organized. How very apparent is the truth of this when illustrated by the production of an article that requires great care in finishing, when appearance is a standard requirement. And never was this more true than to-day, and in nothing of to-day so much as of the automobile. The person who will buy a piano and never presume to call for a different finish than is shown in the salesroom will often have a whole alphabet of specifications to register when the painting, trimming and striping of their automobile is concerned.

Before the paint department gets its colors, before the material or supply stores receives this part of its stock, even before the purchasing department places its orders, comes the work of the chemist. Unfortunately, what is cheap in its first cost and what is excellent in its first appearance is not always the paint that is approved by the chemist. The workman approves or condemns his paints by the way they "feel" on the brush and surface, by the way they "work" when being applied—evenness, smoothness, body and the right shade. The purchasing agent often feels that he is doing his best when he gets closest to the border of complaint the paint foreman has made, yet just escaping it, and cuts down his cost while doing it. Then comes the chemist who bears in mind the demands of these two departments only enough to contrast them with what he knows are the requirements of the work. A chemical analysis of paint is absolutely essential wherever this commodity is important either for its quantity or quality. In the former instance this supervision will often work a great saving in first cost, but with an article that is subject to hard usage and yet must retain an appearance of elegance and luxury, there is only one consideration worth mentioning—the proven, tested best, without one hesitation as to cost. Therefore, from the first coat of white lead to the final coat of varnish, the technical knowledge and work of the chemist is demanded, if permanent results are to be satisfactory. And when it is learned that the body of a first-class automobile has from 18 to 20 dressings before it reaches the customer, the importance of the chemist is readily appreciated.

In the arrangement of the paint room the best possible light has to be provided, and ample space that the finished work may not be rubbed while "wet." The room must be free from dust, well ventilated and dry.

There are so many considerations that may be thought of chief importance, when allotting space to the paint room, that one hesitates to begin, except when relative values have been laid aside. So without discussion as to which should come first, let us begin with light. No argument will convince the man of experience that artificial light is adequate for the paint room. Daylight is an absolute necessity, plenty of it is very desirable, and an even light, without reflection or artificial interference, is sure to produce best results. The man who puts the finishing shade on an automobile that has been ordered by a woman whose wealth and custom gives her the privilege of being critical

*The Hub is indebted to American Industries for the use of this article and cuts. The illustrations represent the paint shop of the Electric Vehicle Co.

Digitized by Google

to the last detail may not demand the skylight the artist finds necessary—but he needs every facility that it is possible to give him.

Then there is the consideration of its location in relation to the rest of the factory. Economy in production dictates that this department adjoin the one from which it receives its parts, on the one hand, and the one to which it sends its parts, on the other. But perfection in production may not be sacrificed for economy—or no economy is gained in the end. Hence the paint room must avoid all factory activities that might interfere with its best production. Above all things the paint room must be kept free from dust. Even excessive vibration is not conducive to best results when the finishing work on a fine job is underway.

Where a factory occupies more than one floor it is, of course, desirable that the paint room be put at the top. The light will certainly be better, the liability of dust reduced, the place dryer and ventilation improved. The last two mentioned factors, while not mentioned before, are none the less important. Quick drying means, better appearing work and the possibility of removing the article sooner that room may be made for another job.

The body of a high-grade automobile is without doubt the most carefully decorated portion of any vehicle of any description. The first thing that happens to it upon its reaching the paint department is a coat of white lead. This is followed by at least two coats of a composition known as "rough stuff." In the meantime it has been properly measured for its upholstery, or trimming, and after these first three coats is turned over to the trimmers for the completion of their work. When returned to the painters the wood is rubbed to a "satin" finish with prepared stone and pumice. After this follows several coats of paint and varnish, sufficient to give the body a solid, distinct and even color. But that is by no means all that is required to put them in a condition to stand rough usage and yet retain an appearance of having just come from the factory. So now the body is again rubbed thoroughly, but this time with felt and powdered pumice. During all these operations, with the exception of when it was being trimmed, the body has remained in the more general workroom of the paint department. For the finishing coats is passes through two smaller rooms, tightly made and shut off from all the rest of the works. In the first of these two rooms two men work, and no one is allowed to go in there except when necessity absolutely demands. In the second of these two rooms there is but one man at work, the master varnisher, and into this room no one else is supposed to go; even officials never presume on their authority in this regard. There is a window in the partition of this room that looks out into the main part of the paint room. Over this window a shade is drawn from the outside, and from this vantage point the foreman is able to mark the progress made by the workman within; and here he may attract his attention and communicate with him through the glass.

Even now the automobile body may not leave the paint department, for there is yet another small room it must visit. Here the striping is done and here monograms and crests are put on machines that have been built to order, or finished according to the dictates of a purchaser.

The responsibilities of the foreman of the paint department in a manufactory of this kind are peculiar. The supervision must be much more general than in the great majority of departments, for the value of the work, the obtaining of the best results, lies so much with the individual workman.

For such reasons as these it is desirable that the foreman should take greater pride in the quality, rather than in the quantity, of his output.

The trimming room, where the automobile body is received after the first three coats of paint have been applied. From here the body is returned to the painters for the completion of their work.

ENGLISH INVENTION FOR AUTOMATIC CONTROL OF SPEED.

Vice-Consul H. M. Byington, of Bristol, reports as follows concerning a new British apparatus which controls the speed of motor cars: According to the published description of a practical trial, the device automatically removes the clutch when the speed of the car slightly exceeds the arranged limit, and when necessary the brake is also automatically applied until the rate is reduced just below the limit. The brake is then quickly but gently removed and the clutch again put in. A semaphore is automatically raised to warn the driver when he is approaching the maximum. The mechanism, which fits in a compact aluminum box and works in oil, takes very little space. It is put in action or out of gear in an instant, and there is no need to stop or slow down the car while this is being done. The aparatus can be locked up so that the driver of a car cannot exceed the speed desired by the owner.

Every effort was made on the trial to get the car to exceed the limit, which was set for 16 miles an hour. On coming to a fairly steep hill the engine was allowed full power and the car instantly started to gain speed. But as soon as the limit was reached the brakes were applied strenuously, as if by magic (though no sudden jar was experienced), and the engine merely "raced" without the slightest effect on the car, the speed being mantained at the 16-mile rate throughout.

Digitized by Google

Hudson-Fulton Celebration.

Five Million Visitors Will Pay Tribute to the Men Who Found and Crowned the Hudson River.

The celebration of the three hundredth anniversary of the discovery of the Hudson River by Henry Hudson, and the centennial of the application of steam to navigation by Robert Fulton will take place in New York late in September. The citizens of New York have already contributed two hundred thousand dollars for this celebration besides the large appropriations from cities and State, and it bids fair to be one of the greatest anni-

ROBERT FULTON.

versary events the country has ever seen. It will include participation by the navies of foreign lands, the official reception of another Half Moon built in Holland and shipped to this country on board a modern liner and the voyage of the replica of the Clermont—Fulton's first steamer—up the historic stream which Hudson found and Fulton crowned.

The festivities will begin Saturday, September 25, with the rendezvous of foreign vessels of war in New York harbor and will continue a week. England, Italy, Mexico and several other nations will be represented in this demonstration. Public and private buildings are to be decorated in New York and in all the towns to the head of the river. The Edison Company has reduced its price of electric light to one-half. Brilliant pageants on land and water will take place during the week, interspersed with magnificent social receptions.

It will be the occasion for a tremendous influx of visitors into New York. Hotels are already taxed to meet the requirements of applicants, and every preparation foretells a very successful affair. Indeed it is said that 5,000,000 visitors will come to New York for the occasion. And this number doesn't seem exaggerated when one remembers that New York has a million floating population every day.

The replicas of the Half Moon and the Clermont, true copies of the originals, will maneuver with the parade, affording and opportunity to hundreds of thousands of persons to see the two most remarkable boats in New York harbor within the memory of present residents.

The night parade will be a dazzling affair. The fleet will be brilliantly illuminated and an elaborate program of fireworks has been arranged through the Paine Fire Works Company. The Clermont will be seen exactly as she appeared in 1807 and will duplicate her maiden trip, starting from her original slip and landing at the same pier at Albany at which she tied up at the conclusion of her first trip. She will be escorted in company with the replica of the Half Moon, by a great fleet of war vessels of many nations, pleasure yachts and merchant craft from New York to Albany. This escorting fleet will constitute the greatest naval parade in the history of this country .

The celebration has aroused great popular interest in both navigators. Fulton made his trip when the river itself was already known. but there is a sentimental as well as a great historical interest in the voyage of Hudson, the first white man to explore the majestic Hudson River.

Hudson set sail from Amsterdam on April 4, 1609, with a mixed crew of about 18 Dutch and English sailors. On May 5 he rounded the North Cape. On May 19 he reached the North Cape again on the return trip, having been baffled by the ice and the refusal of his crew further to attempt to find a northeast passage.

Chagrined at his failure in this direction and determined to win success somehow, he proposed to his crew to search for a northwest passage by another route. This idea had been suggested to him by letters and maps which his friend Captain John Smith had sent to him from Virginia and by which Smith had informed him that there was a sea leading into the western ocean between New England and Virginia. It is a curious fact that at this time North America was believed to be as narrow at this point as it is at the Isthmus of Panama, and the Pacific Ocean was thought to extend eastward as far as New York State. The crew agreed to the latter proposition and Hudson turned his prow toward the American coast.

He reached New York Bay at 5 o'clock on the afternoon of September 2. A week was spent in exploring the adjacent waters with the small boat, during which time the Half Moon ap-

HENRY HUDSON.

pears to have been in the Lower Harbor. In this search "they found a good entrance between two headlands" (probably the Narrows), "and thus entered on the 12th of September into as fine a river as can be found." They ascended the river as wind and tide served, always anchoring at night, and on Saturday, September 19, the Half Moon had reached her "farthest north,"

The Hub is indebted to Dry Goods for the use of this article and illustrations.

Digitized by Google

which was opposite the city of Albany. From this point Hudson sent the small boat to explore still farther in the hope of finding deeper water beyond, but in this he was disappointed. Convinced that this was not the much desired route to the Pacific, he weighed anchor at noon on Wednesday the 23d and started down stream, and on October 4 she passed out to sea.

The First Trip of Robert Fulton's Clermont.

A few days before August 17, 1807, a strange looking craft was taken around from the East River to the North River and moored near the old State's Prison, which stood on the square bounded by Washington, West Tenth, West and Charles Streets.

BUYING MANHATTAN ISLAND FROM THE INDIANS.

It was 150 feet long and 13 feet wide with 7 feet depth of hold and drew 2 feet of water. Her hull (below the deck) had wedge-shaped bow and stern cut sharp to an angle of 60 degrees. She was almost wall-sided, had two masts, but no bowsprit or figure-head, but had a cabin forward and one aft.

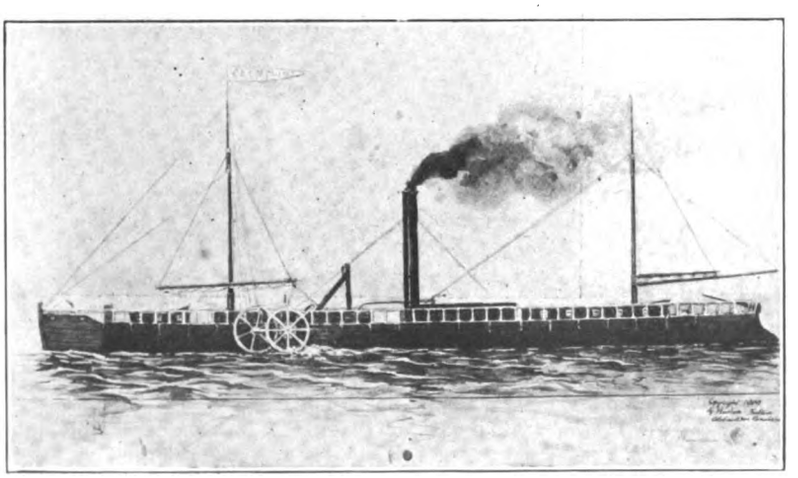
It was the Clermont, Robert Fulton's first Hudson River steamboat, and he had announced that he would make a trip to Albany under steam power.

On Monday, August 17, 1807, the American Citizen printed this announcement:

"Mr. Fulton's Steam Boat, invented with a View to the Navigation of the Mississippi from New Orleans upwards, Sails today from the North River, near The State Prison, to Albany. The Velosity of The Steam Boat is Calculated at 4 miles an hour; it is said that it will make a progress of two against The Current of The Mississippi; and if so it will certainly be a very valuable acquisition to the Commerce of the Western States."

That morning the shore of the river was crowded with thousands of citizens, many of whom had come to deride what was called "Fulton's Folly." Jeers and cat-calls saluted Fulton's ear, and the waggishly inclined significantly tapped their foreheads. "God help you, Bobby!" cried one. "A fool and his money are soon parted," cried another. "Bring us back a chip of the North Pole," facetiously shouted another.

Fulton, pale, but with an air of confidence, went about his preparations to start. Presently dense volumes of smoke began to pour forth from the smokestack. The boiler began to hiss. At 1 o'clock the hawser was drawn in, the throttle opened, and to the accompaniment of the stertorous exhaust, the uncovered sidewheels began to quiver, then slowly to revolve. A hush fell on the spectators. Fulton's own hand at the helm turned the bow. The Clermont moved out into the stream, the steam connections hissing at the joints, the crude machinery thumping and groaning, the wheels splashing and the smokestack belching like a volcano. The boat continued to gather momentum and move away. Then the nervous tension of the situation was broken. All on board swung their hats in the air and gave a cheer, and like an echo, magnified a thousand times, came back a roar of applause from the shore. Skeptics had been converted. Those who came to scoff remained to cheer. The Clermont was a success, and steam navigation in America was established beyond peradventure.

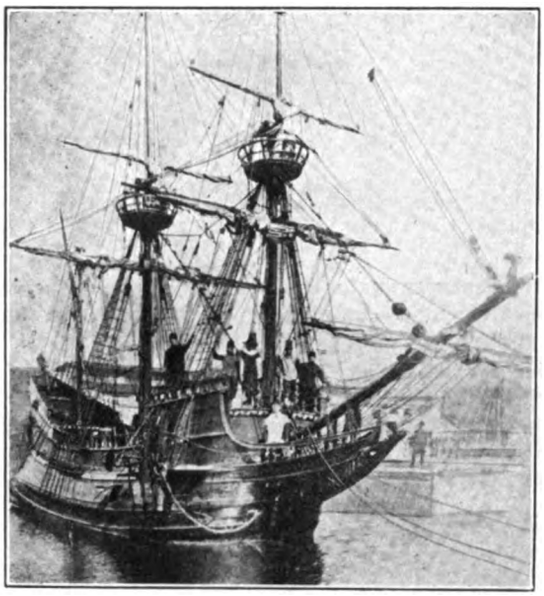


THE CLERMONT.

As the steamboat proceeded up the river it spread consternation among superstitious mariners and unsophisticated countrymen. No such sight had ever been seen before. The pine wood used for fuel produced a torrent of black smoke, flame and sparks, which belched forth to a great

Digitized by Google

height above the smokestack. The reverberation of the exhaust as the boat passed the Palisades was something absolutely unheard before by human ears in this region. Crews of other vessels were terrified. Many at first sight fell on their knees, dis-

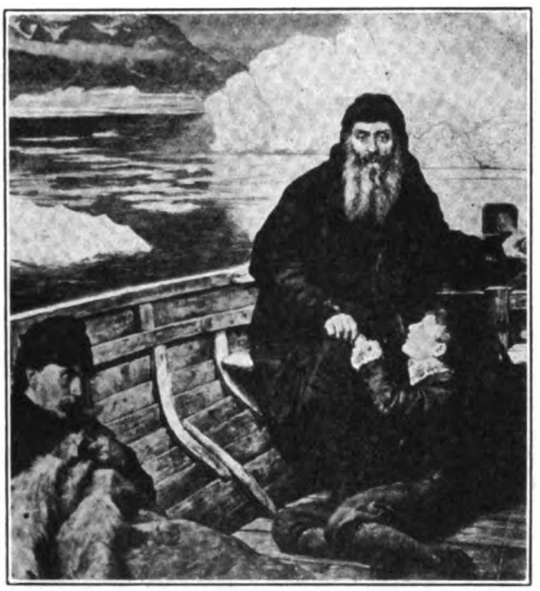


THE HALF MOON.

appeared below decks or made for land. One honest countryman, after beholding the unaccountable object from the shore, ran home and told his wife he had seen "the Devil on his way to Albany in a saw mill." Not since Hudson's Half Moon had sailed over the same course nearly 200 years before, exciting the wonder and awe of the aborigines, had such an amazing sight been seen by the neighboring inhabitants.

When the Clermont reached Haverstraw Bay, says one of the passengers, a man in a skiff lay waiting for it. He appeared to be a miller, and the paddle wheels attracted his attention. He asked permission to go aboard and Fulton ordered a line to be thrown to him. The miller said he "did not know about a mill going upstream and came to inquire about it."

Resuming their journey the next day, Wednesday, at 9 a. m., the Clermont reached Albany, distant 40 miles, at 5 p. m. The running time for the whole 150 miles had been 32 hours, or at the rate of nearly 5 miles an hour. The return trip on Thursday and Friday was made in 30 hours running time, or an average of just 5 miles an hour. The wind had been against the Clermont both ways, says Fulton, so that no advantage could be derived from his sails. The whole journey, therefore, had been performed by the power of the steam engine.

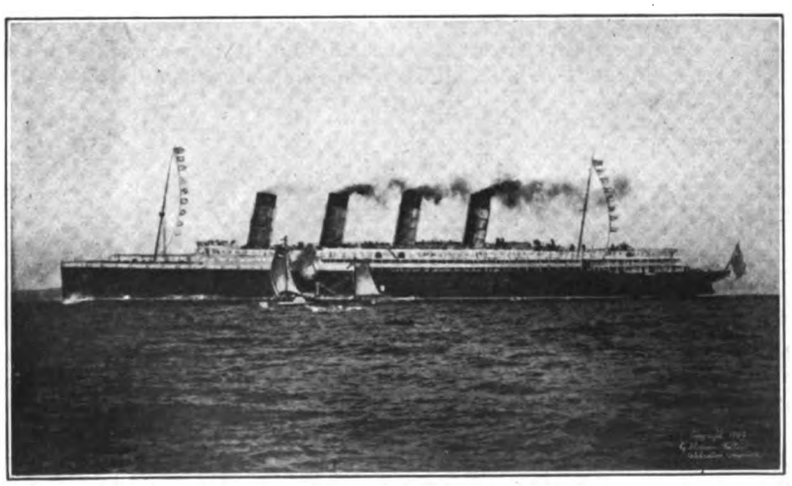


LAST DAYS OF HENRY HUDSON.

On Saturday, August 22, the American Citizen bestowed upon this extraordinary achievement the following 37 words of comment:

"We congratulate Mr. Fulton and the country on his success in the steamboat, which cannot fail of being very advantageous. We understand that not the smallest inconvenience is felt in the boat either from heat or smoke."

The lack of appreciation of Fulton is in strange contrast with the preparation for this celebration.



LUSITANIA.

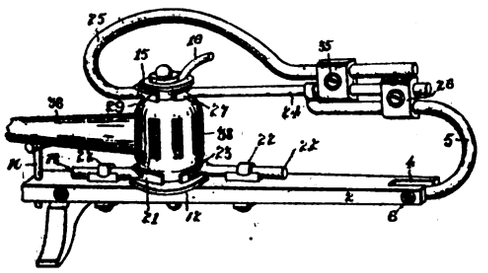
MONUMENT TO HUDSON.

Digitized by Google

RECENTLY GRANTED PATENTS OF INTEREST TO THE CARRIAGE INDUSTRY.

Spoke Setter. Arthur R. Kunzmann, Volga, Ia. No. 929,957. Patented August 3, 1909.

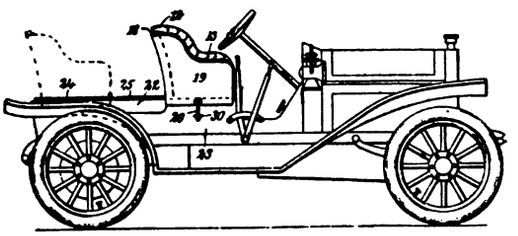
A spoke setter with a plate on the base upon which the hub rests, stays adjustably secured to the base and adapted to engage the opposite sides of the hub while it is on the plate, a rest for the spoke adjustably secured to the base at one end, an arm pivoted to the base at the opposite end from the rest,



a stay adjustably clamped to arm and adapted to engage the hub near the top on one side, a second stay adjustably clamped to the first stay and engaging the hub near its top on the opposite side from the engagement of the first stay and the stays and arm adapted to be turned upward and backward upon the pivot of the arm, and a rod passing through the hub, the plate and the base and provided with a hand screw to secure the hub on the plate.

Vehicle Seat. Edward H. Faile, New York, N. Y. No. 930,061. Patented August 3, 1909.

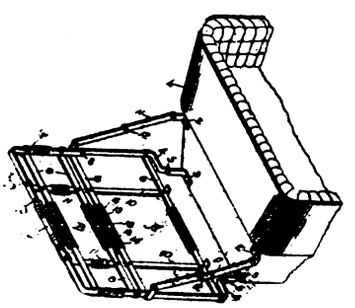
A vehicle body having a front seat and a movable rear seat including a seat bottom and a seat back, the seat bottom being supported independently of seat back and hinged at its front



edge to swing forwardly to inoperative position, and the seat back being slidable forwardly over the bottom to a position adjacent front seat and beyond the front edge of seat bottom when the latter is in inoperative position to permit the return movement of bottom to operative position.

Rack. Albert S. Noonan, Rome, N. Y. No. 930,410. Patented August 30, 1909.

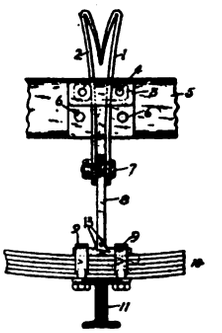
A rack with opposite side members adapted to be suitably supported, a strip extending from each side member toward the other and having a plurality of perforations near adjacent ends,



the adjacent ends being beveled, and a channeled undercut splicing piece having a plurality of perforations near opposite ends, whereby the splicing piece may be secured in any position of desired adjustment to the strips.

Shock Absorber. George E. Shippey, Pittsfield, Mass. No. 930,498. Patented August 10, 1909.

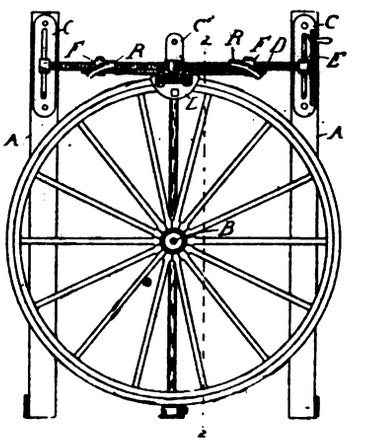
A shock absorber comprising separate, oppositely disposed resilient members, means provided independently of said members for the support and spacing, separate means providing a resilient contact of the members at one of the ends and means



provided independently for automatically applying pressure to the resilient members, producing a retarding effect upon the relative movements of the parts of the vehicle.

Machine for Attaching Tires to Wheels. Henry L. Stoup, Ypsilanti, Mich. No. 930,502. Patented August 10, 1909.

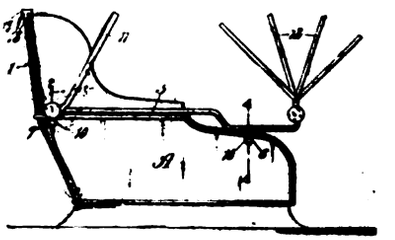
A machine for attaching tires to wheel fellies comprising a frame, a wheel supporting spindle vertically adjustably secured to frame, a transversely extending rotary shaft having right and



left threaded portions upon opposite sides of its center, wire clamping jaws for engagement with oppositely threaded portions, a member removable from the machine engaging the felly, abutments on member for holding the ends of the rubber portion of the tire apart, and clamping means for holding the tire securing wire under tension.

Carriage. Frederick W. Zingsheim, Ferguson, Mo., assignor to Moon Brothers Carriage Company, St. Louis, Mo. No. 930,716. Patented August 10, 1909.

A vehicle provided with a seat frame having a lazy-back, brackets permanently connected to seat frame and projecting laterally from the sides, shifting rails detachably connected to



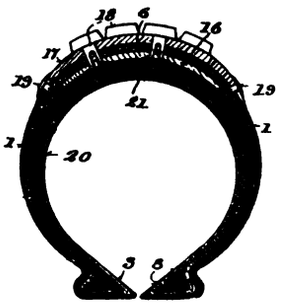
brackets and supported entirely by them, the shifting rails having no connection with the lazy-back or with any members that are secured to lazy-back, integral arms on shifting rails that project laterally from the rear ends and bear directly upon two of the brackets on the seat frame, and prop blocks incasing arms and the brackets on which they rest.

Making Casings for Pneumatic Vehicle Tires. John O. King,

Digitized by Google

Milwaukee, Wis., assignor to King Leather Tire Co., Milwaukee, Wis. No. 931,207. Patented August 17, 1909.

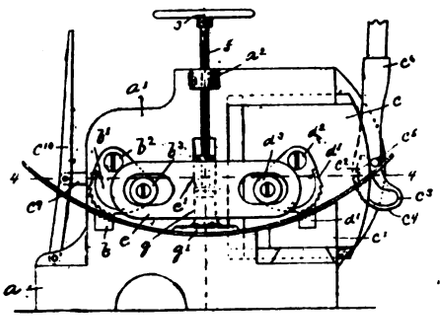
A method of making outwardly leather metal studded pneumatic tire casings, consisting in forming a pair of flat circular blanks from sectors of soft, dry finished leather; joining the blanks at their outer circumferential edges to form a transversely



U-shaped shell; truing the shell on a mandrel without appreciable stretching; securing metal studs to the trued shell and adhesively attaching the product to an open casing carcass having outwardly beaded extremities with which the product is made to conform without closing the opening.

Tire Upsetter. John H. Macdonald, Beverly, Mass. No. 931,325. Patented August 17, 1909.

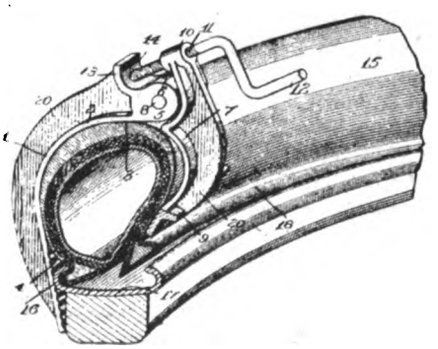
A tire upsetter, the combination of two sets of tire-gripping jaws, each set comprising a stationary and a movable jaw, a slotted cross-head engaging pins on movable jaws, means for



moving cross-head vertically, a recessed support bearing the cross-head, and a clamping-head having an upright standard or support which enters the recess in the support and pivotally connected.

Tire Adjuster. Adam A. Long, Rochester, N. Y., assignor to Long & Mann Company, Rochester, N. Y., a corporation of New York. No. 927,254. Patented July 6, 1909.

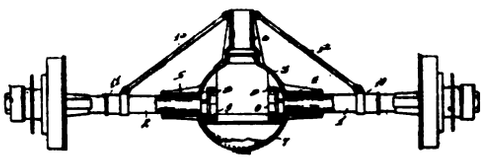
A device for adjusting tires of vehicle wheels comprising a pair of pivotally connected jaws, one of which is longer than the other and has a smooth and curved tire-engaging face conform-



ing substantially to a transverse profile of one side of a pneumatic tire and an elongated corrugated rim-engaging portion beyond the curved face to co-operate with a wheel rim to which the tire is secured, and the other jaws carrying a smooth tire-engaging heel to operate on the opposite side of a tire between the ends of the curved face of the longer jaw.

Rear Axle for Automobiles. Frederick C. Miller, Cincinnati, O. No. 931,451. Patented August 17, 1909.

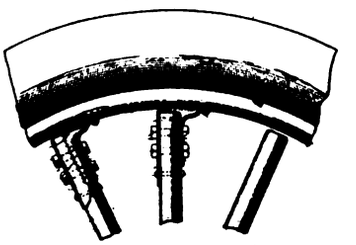
In combination with a tubular rear axle of an automobile, a gear casing secured thereon, rods extending in a horizontal plane



with their inner ends attached to the gear casing and their outer ends attached to the axle, and a rod extending substantially in a vertical plane with its outer ends attached to the axle, and its intermediate portion bowed under and socketed in the bottom of the casing.

Vehicle Wheel. Thomas B. Jeffery, Kenosha, Wis. No. 931,615. Patented August 17, 1909.

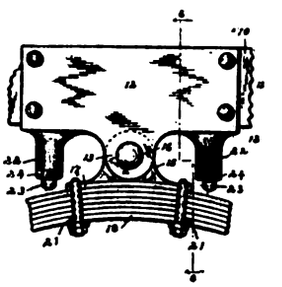
A vehicle wheel, the combination with the main spoke members thereof, lugs secured upon the ends of the members, a de-



tachable tire-supporting rim surrounding the members, lugs projecting inwardly from the rim and overlopping the lugs, transverse teeth on the engaging surfaces of the overlapped lugs, and means for securing the lugs together with the teeth interlocked.

Shock Absorber for Vehicles. Frederick N. Rosenstengel, Indianapolis, Ind., assignor of one-half to Ferdinand R. Strickler, Franklin, Ind. No. 931,653. Patented August 17, 1909.

The combination, with a vehicle frame, of a shock absorber



comprising a spring, adjustable buffers interposed between spring and vehicle frame for controlling the movement of spring, and means for varying the length of buffers and positively maintaining them when adjusted in fixed relation to spring.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE CARRIAGE INDUSTRY.

Patents Expired July 12, 1909.

478,564—Elastic Tire for Vehicle Wheels. Frederick H. Bullard and Frank Harrington, Chicopee, Mass.

478,678—Thill Coupling. George H. Allen, Brockport, N. Y.

478,706—Wagon Box. Charles Nelson, Axtell, Neb.

478,715—Road Vehicle. Elmer V. Santee, Easton, Pa.

478,758—Running Gear for Vehicles. Benjamin H. Paugh and George W. Fridley, Philippi, W. Va.

478,918—Vehicle Wheel. Clinton D. Cannon, Battle Creek, Mich.

478,937—Spring Vehicle—Thomas D. Lines, Syracuse, N. Y.

Patents Expired July 19, 1909.

479,034—Draft-Equalizer. John S. Thompson, Cyrus, Minn.

479,076—Wagon End Gate. Pierre Millet, Bonnet Carre, La.

479,088—Draft Equalizer. Thomas J. Fredericks, Audubon, Ia.

479,146—Thill Coupling. Willard C. Williamson, Rush Creek Valley, Ind.

479,286—Blacksmith's Forge. Theodore W. Lenzen and Louis Heckenroth, San Jose, Cal.

Digitized by Google

Trade News From Near and Far

NEW FIRMS AND INCORPORATIONS.

The firm of A. Wrenn & Son, carriage builders, at Norfolk, Va., has been incorporated with a capital stock of $300,000.

The Ajax Wheel Company, Cleveland, O., capital $10,000, has been incorporated by John A. Hoover and others.

The Studebaker Colorado Vehicle Co. has been incorporated at Denver with a capital of $100,000. W. S. Hunnewell, W. Scott Bicksler and Jesse M. Wheelock are the incorporators.

The Sanford Realty Company, Kittery, Me., dealing in vehicles and merchandise of all kinds, capital $100,000, has been incorporated. President, Charles F. Hooper, of Sanford.

W. H. Kriegshaber and others have organized a company in Atlanta, Ga., to manufacture automobiles.

The Prince-Martin Co. has engaged in the vehicle and implement business in Ft. Morgan, Cal.

Ole Hansen has just engaged in the hardware and implement business in Gwinner, N. D.

The Brown-Auto Carriage Co. has been incorporated in Cleveland, O., with a capital stock of $15,000.

The Troy Manufacturing Co. has been incorporated in Troy, O., to make automobile bodies and parts.

A. H. Kleberg has engaged in the vehicle and hardware business in Caroline, Wis.

E. L. Wilder has opened a new stock of buggies, etc., in Lyons, Mich.

Olaf Mattson has engaged in the vehicle and implement business in Ash Creek, S. D.

S. J. Moxley has engaged in the vehicle business in Bennington, Kans.

B. M. Gilbert has opened a new stock of vehicles and hardware in Ashland, Neb.

Sparta (Ky.) Hardwood, Vehicle & Implement Co. has been incorporated with a capital of $10,000.

The Phenix-Girard Carriage Works has been organized in Girard, Ala., by A. C. Fussell and others.

BUSINESS CHANGES.

J. W. Forney has sold out his vehicle and implement business in La Crosse, Kans., to W. A. Robinson.

C. W. Tempero has purchased the stock of vehicles and implements of G. E. Harris, in Keats, Kans.

C. H. Russell has purchased the stock of vehicles, etc., of C. W. Dow, in Indianola, Neb.

G. R. Meredith & Son have purchased the stock of vehicles, etc., of C. G. Towes, in Henderson, Neb.

Thos. W. Fritts & Co. are succeeding to the harness and vehicle departments of the Tom Fritts Hardware Co., in Chattanooga, Tenn.

Clarence E. Rogers has sold out his stock of wagons, implements, etc., in Harper, Kans., to C. E. Corley.

L. B. Hanson has purchased the carriage and implement business of Dan Heard, in Enderlin, N. D.

J. M. Lee & Co. have purchased the stock of implements and vehicles of C. M. Campbell & Sons, in Temple, Tex.

F. X. A. Perrin has purchased the vehicle and implement business of H. N. Wekseth, in Bottineau, N. D.

H. M. Young has sold out his hardware and vehicle business in Carmen, Okla., to Devereaux & Springer.

The Babb-Dwyer Co. has succeeded to the hardware and vehicle business of J. H. Dwyer & Sons, in Wakonda, S. D.

F. J. Conrad has sold out his vehicle and hardware business in Wayland, Ia., to McCoy & McClintock.

W. P. Reed has succeeded C. W. Fletcher in the vehicle and hardware business in Loup City, Neb.

Phares & Wicks have succeeded Phares & McIntosh in the vehicle and hardware business in Anatohe, Wash.

The Henry H. Van Brunt Co., of Council Bluffs, Ia., has sold its implement and vehicle business in Sioux Falls, S. D., to the Rock Island Plow Co.

Volney Strong, at Clarksville, Mich., has sold out his buggy business to George Wirt and Charles Justice, of Lake Odessa, who have taken possession.

C. K. Sweet, who has been doing a large implement and vehicle business at Brownwood, Tex., for several years, has sold his stock to W. A. McIntosh and Clark Warren.

The Bloomville (O.) Carriage and Wagon Works has been sold to Jacob Miller, of Fostoria. A garage will be added.

Hastings Buggy Co. has been succeeded by Henry and Ike McFarland, at Hastings, Ia.

Fred Miller has sold his interest in the Miler Manufacturing Co., at Monroe, Wis., to Adam Elmers. Mr. Gillum succeeds Mr. Miller as manager.

MISCELLANEOUS.

The Caldwell & Loudon Wagon Works are being rebuilt at Traverse City, Mich.

The Corbitt Buggy Company, of Henderson, N. C., has added to its plant an automobile factory, and is beginning to turn out some very attractive machines.

The Carolina Buggy Factory, of Henderson, N. C., has purchased 80 acres of land upon which it is erecting an up-to-date factory.

The machinery for Benedict & Christie's new cart factory, at Farley, Ia., is being installed. The factory will soon be in operation.

The Washington (N. C.) Buggy Co. has moved into its new three-story building which is said to be one of the largest buggy factories in the State of North Carolina.

The Davenport (Ia.) Wagon Company has been granted a permit for the erection of a building to cost $52,000.

E. C. Hornor, president of the Business Men's League of Helena, Ark., claims to have closed a deal by which Helena is to secure a wagon factory, the output of which will be 1,500 wagons a year.

A new wagon factory will be established at Lake Charles, La., by a company represented by A. G. Walters.

The Wisconsin Carriage Co., of Janesville, has increased its capital from $50,000 to $100,000.

The Excelsior Seat Co., of Columbus, O., has had its capital stock increased from $50,000 to $150,000.

Frank Swanstrom, who for many years has conducted a blacksmith shop at 2020 West First Street, Duluth, Minn., has made plans to remodel the building in which he is now located, and in the future will operate a wagon factory there.

TWO NEW CONCERNS AT AKRON.

Two new concerns have recently been organized at Akron, O., and are beginning operations. The Akron Pneumatic Tire Making Company is manufacturing machines for stretching the fabric in the formation of the tires, and will either lease the machines or sell the rights on a royalty basis. The machine was invented by H. C. Squires and J. W. Meeker. The Fall Rubber Company, of Cuyahoga Falls, which will produce automobile and buggy tires, is the other new comer.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

Little Problems.

Many little but difficult problems confront the automobile builder which neither skill nor inventive talent has yet overcome. But these little problems do not injure the business. They bother the few who are seeking to effect radical changes. The fuel problem has made very little headway beyond the best possible utilization of present sources of supply. Some talk of the wonderful possibilities of lignite, but this is of interest more from the commercial side, and yet no small amount of research work is being conducted along lines looking to greater efficiency from fuel.

Whether the world is to be able to place reliance on something else than rubber is also an interesting question. While nothing of a practical nature has been accomplished in the way of substitution it is interesting to read of the seemingly hopeless efforts and researches of investigators to find something that will answer the purpose as well and cost less.

These experiments and tests are going on with nearly every part of the automobile, from the composition of material to the minutest relation of part to part. The most efficient stroke is once more called in question. Improvements in anti-friction bearings are promised. Larger wheels are talked about and advocated by some with reasons which read all right.

And so it goes. The apparently perfected machine of to-day is no more a perfected machine than was its crude grandfather of ten years ago. The monthly list of automobile patents, the appearance of new styles based upon mechanical modifications, all go to emphasize the possibility of a better machine as the outcome of that evolutionary process which is the foundation of all progress.

The Unit System.

The automobile industry is rapidly reaching a solid basis—the unit basis, which belongs to the assembling of parts. In carriage and wagon making the assembling of parts is simple, safe and highly economical. The same principle applies to automobile building, but with the difference that it is more difficult to apply the principle. In auto part making there is an absolute necessity for almost microscopic exactness which calls for careful machining. Even then, with the utmost care and finest mechanical efficiency there is the constant danger of overlooking the almost microscopic inequalities which are sure to lay the foundation of trouble in use. The unit system is an absolute necessity and it is finding rapid favor. It places responsibility on the respective specialists who devote themselves to the production of specific parts.

The responsibility, however, cannot be shifted, no matter how well and carefully the respective parts are finished. The fitting of the pistons in the cylinders have to be exact. The crank shaft has to be perfectly balanced, gears must not bind or run loose; every part has to be looked after and the responsibility for perfect work assumed by the assembler. Parts cannot be flung together. The unit system, with all the responsibilities it involves, will ere long rest on a solid basis.

Good Roads Convention.

The Good Roads Convention, to be held at Cleveland, Ohio, September 21-23, will be attended by representatives of the various automobile organizations and by large manufacturing interests. Extensive plans have been laid for uniting all interests into an efficient and working organization. There has never been such a representative organization attempted, and it will represent more capital and energy than any organization outside of the National Bankers' Association.

Expansion of the Industry.

The general expansion of automobile manufacturing facilities is a matter of special interest at this time. The production of the past season has been placed by some authorities at 125,000, and the estimate has been made of 200,000 for 1910. Of these it is figured out that 165,000 will be pleasure vehicles, 30,000 high-wheeled buggy types and 5,000 will use steam or electricity, including commercial vehicles. The estimated total value of the output is $200,000,000.

It is remarkable that the farmers' demand, especially for autos, is regarded as the most promising. It is impossible to more than guess at the amount of capital that will be invested between now and next summer. It is predicted in some quarters that the industry is in danger of overdoing itself. Be this as it may, the rage is on and nothing can arrest the inflow of automobile capital and the expansion of the manufacturing capacity. The average price of cars is placed at $1,200, with the greatest demand for those under $1,500.

Experiments made with a longer stroke motor, that is, when the travel of the piston is greater than the diameter of the cylinder, show that greater efficiency is obtained. A 4x4 gives, say, 1,500 revolutions and a 4x6 1,000. This fact in itself does not decide as to preference, but is valuable when taken in relation cost the returns are inadequate.

One of the observable modifications is a longer wheel base especially intended to provide additional seating room and capacity. The extension is not without its attractive feature. The idea, however, does not impress many builders.

As tending to show the deep interest taken in the automobile business it may be mentioned that at least ten Cincinnati carriage building firms are preparing to build automobiles.

Digitized by Google

DEVELOPMENT IN BODY DESIGN.

Improvement in automobile body design has fully kept pace with improvement in the motive power and running gear. We can all remember the bulges and scrolls of the "Roi des Belges" so popular five years ago, which enjoyed the triple distinction of being offensive to the eye, painful to the spinal column, and back-breaking for the unfortunate chassis. Our new body is simple in outline and decoration; it relies for effect on proportion and the arrangement of masses. Its simple lines permit a lighter and more mechanical construction, and the graceful reverse curve beloved of the artist no longer catches the unhappy passenger in the small of the back. The depth of the seats and the foot-room have been worked out with some regard for human anatomy; this done, the body builders have made that world-old discovery that utility is the larger half of art.

The most significant development has been that in "baby" and close-coupled tonneaus. The remarkable popularity of these designs indicates that the desire for excessive seating capacity is no longer dominant. A most sensible and logical body, at least in respect to size, was shown on a foreign car in one of the New York shows, but failed to receive the attention that it deserved. It was of the close-coupled type, but the rear seat was divided so as to provide comfortable accommodation for two persons. In addition, there was a single folding seat in the middle, instead of the customary pair. This arrangement seems ideal. Four makes a good party: and, if there should be a fifth, he would be at least as comfortable on the auxiliary seat as in the middle of the usual tonneau seat. Everyone forced to occupy that seat will join in a prayer for its early abolition.—Automobile

RACKS AND TOOLS IN DOOR OF THE CAR.

A suggestive scheme has been evolved by a foreign designer in connection with the recent development of one of the new-styled, high-sided runabout bodies. The doors which are fitted to the front seats are concoved, and the enclosure thus formed is utilized as a convenient and wonderfully capacious tool rack. Practically all the utensils such as might be required for wayside repairs are there suspended in appropriate racks, where they are within easy reach of the stranded operator while he is at work on his motor; while as a matter of protection only, they are covered, when not in use, with a stout leather flap, which is securely buttoned down.

BIG FIRE IN AKRON.

The plant of the Buckeye Rubber Company, at Akron, O., with the exception of the vulcanizing and finishing departments, was destroyed by fire early in August. The loss has been estimated between $100,000 and $150,000, according to General Manager S. S. Miller, all covered by insurance. The main building, which was destroyed, contained the offices of the Buckeye Company, the manufacturers of Kelly-Springfield tires, and of the Consolidated Rubber Tire Company, of New York, the selling agent. The plant was working overtime to fill orders, and the officers announce that arrangements have been made to fill the accounts with little delay. The factory will be rebuilt.

Some builders of automobiles are meeting with a fair demand for trucks of moderate weight and capacity to haul loads as a supplemental agency to trolley roads. When trolley lines enter generally on the hauling of freight, these builders believe it will open up a greatly increased demand for trucks in rural sections.

W. H. McIntyre, Auburn, Ind., carriage builder, has entered for the Glidden tour a two-cylinder, air-cooled motor buggy, solid tires, what he believes will show other motor buggies how to go.

OBITUARY

John Becraft McFarlan.

John Becraft McFarlan, 86 years old, founder and president of the McFarlan Carriage Company and a resident of Connersville, Ind., for more than half a century, died August 15 following a brief illness.

Mr. McFarlan was born in London, England, November 7, 1822. He came with his parents to America in 1831, and lived on a farm near Cincinnati until he became of age. He took employment in a carriage factory in Cincinnati, and afterward engaged in the carriage repair business on a small scale. He moved to Connersville in 1856, and started what is now the McFarlan Carriage Company, a large concern employing several hundred men and making a product which is sold the world over. At the time of his death Mr. McFarlan was president of the Connersville Blower Works and a large stockholder in the Krell Auto-Grand Piano Company. Mr. McFarlan was married to Miss Lydia C. Jackson in Cincinnati, October 16, 1845. Seven children were born to them, five of whom survive, and all of whom live in Connersville. As a token of respect all the banks and principal places of business in Connersville were closed the day of the funeral.

Tilghman Statler.

Tilghman Statler, the oldest Odd Fellow in the Lehigh Valley, and a leading carriage manufacturer for many years, died at his nome in Allentown, Pa., on July 30. Although he reached the venerable age of 91 years, it was only four years ago that he laid aside the cares of business. He never smoked or used intoxicants during his whole life, and enjoyed remarkable health up to his last illness.

George L. Walker.

George L. Walker, vice-president of the Flint (Mich.) Wagon Works Company, and for upwards of forty years prominently identified with the manufacturing interests of that city, passed away at his home, 627 Garland Street, after an illness of only a few days. He is survived by his wife and two daughters He was born August 27, 1838, at Mt. Morris, Mich.

W. P. Hobbs.

W. P. Hobbs, aged 75 years, died August 4 of heart failure at Yorkville, S. C. Mr. Hobbs moved to Yorkville in 1858 and engaged in the manufacture of carriages and buggies, and entered the Confederate service in Company A, Twelfth South Carolina Regiment. He leaves five sons and two daughters.

Elmer C. Mattox.

Elmer C. Mattox, a retired carriage maker of Malden, Mass., died at the home of his daughter August 22. He was born in Limerick, Me., 75 years ago and spent the greater part of his life in Portland, moving to Malden about a year ago. He is survived by his wife and daughter.

William Jackson James.

William Jackson James, a retired carriage manufacturer, died Saturday at his home, 258 Westminster Road, Brooklyn, N. Y. He was born at Indianapolis, Ind., November 15, 1839. He leaves a widow and three sons.

Charles A. Robinson.

Charles A. Robinson, well-known carriage builder of Freehold, N. J., died August 26 the rusult of a stroke of paralysis, aged 79 years and 11 months. He is survived by three children, David and Clarence Robinson, and Mrs. Charles Barkalow, all of Freehold.

Aluminum paint is made by blowing air or gas through molten aluminum while it is setting, and at the same time stirring violently. This forms a spongy or granulated metal that is easily pulverized. The powdered metal is sized and polished.

Digitized by Google

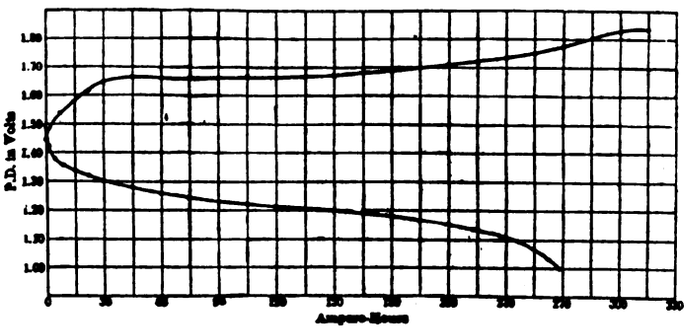
EDISON'S NEW NICKEL-IRON BATTERY WITHSTANDS TESTS.

Edison, the inventor, has promised a storage battery that would revolutionize the industry so many times, each one on trial being marked by a failure that the people have begun to be skeptical of any Edison battery. However, the new type of nickel-iron battery is out and, says The Commercial Vehicle, for nearly two months past the Edison battery, for which electric vehicle users have been waiting so long and impatiently, has been undergoing tests in the regular daily service of one of the leading department stores and one of the largest drygoods establishments of New York City, the two largest users of commercial vehicles in the city with the possible exception of the Adams Express Company.

R. H. Macy & Co., who own and operate thirty-one electric delivery wagons and trucks, had a Lansden wagon fitted with one of the new batteries for three weeks, since which time it has changed hands, being in the service of the pioneer dry goods house, a house that to-day maintains forty-one commercial vehicles, both gasoline and electric, but which as a matter of policy declines to allow the use of its name. By all who have had anything to do with the new battery it is spoken of in the highest terms of approval. But the best presentation of its efficiency will be made by telling exactly what has been accomplished with the battery in an ordinary electric vehicle.

Details of the Two Sizes Made.

The new battery is made in two sizes, designated A 4 and A 6. The former is of the same capacity as the earlier type E 27 Edison battery, rated at 150 ampere-hours discharge. Type A 6 has the same number and size of cells as type E 27 and is of about the same weight, but has nearly double the capacity, giving 260 ampere-hours discharge. It requires a charge of 300



Characteristic Curves on Charge and Discharge of Nickel Iron Battery

ampere-hours, but the users say the loss is much more than counterbalanced by the work it does and by other points of practical excellence. The smaller size battery weighs about 700 pounds and the larger size 1,200. Size A 6 is installed in a demonstration wagon of Lansden make which has been christened the Greyhound, for reasons that will become obvious. At the time an investigation of the performance of this outfit was made, up to June 21, it had been running in the service of the drygoods store for nearly a month.

Upon being received it was given a special test, in which it was run three consecutive days without recharging, and made a total mileage of 93 miles. On the first day it left New York City at 8 o'clock in the morning, crossed the ferry to Jersey City and covered the Bayonne route, going all the way to Bergen Point, making approximately 100 stops for delivery of packages. It returned to the garage at 6 p. m. The same route was covered on the second day, starting at 8 a. m., making about the same number of stops, and getting back at 5 p. m. On the third day it traversed the regular Staten Island route for the store, embracing nearly all the towns on the north end of the island, which is very hilly, and making about one hundred stops. It left the store for this trip at 8.30 a. m. and got back at about 8.30 in the evening. During this entire period the battery received no "boost" and was not recharged. At the end of the test, the voltmeter reading showed 60 volts.

Unusually Severe Route Traversed.

Following this initial test the Greyhound, with battery A 6, was put on the Coney Island route, which is claimed to be the longest and hardest covered regularly in one day by any dry goods house in the city. It is from 63 to 67 miles long and averages 150 stops for deliveries, sometimes running up to nearly 300 deliveries.

In covering this route the Greyhound leaves the store in New York City at 8 o'clock in the morning, crosses the Brooklyn Bridge, and thence runs out Fourth Avenue to 60th Street, where deliveries begin. From there it goes to Fort Hamilton, making deliveries along the way, returns to Dyker Heights, then does part of Borough Park. From Borough Park it delivers all the way down to Bath Beach, taking both sides of the main line, thence through Bensonhurst to Ulmer Park and on down to Coney Island. It covers Surf Avenue, in Coney Island, all the way to Sea Gate, at the westerly end. Returning, it goes to Brighton Beach, then cuts over to Sheepshead Bay and starts on the homeward trip, coming back through Flatbush, where it finishes its deliveries, and re-enters Manhattan by way of the Williamsburg Bridge. The wagon usually reaches the garage at 7 p. m.

If there are an unusual number of deliveries to be made the driver is accompanied by a boy to carry packages, but otherwise he is alone. It is an enormous day's work to be done week after week, but the driver likes it because he gets back from his work about three hours earlier than when horses were used. One reason why it is possible to make so many deliveries on such a long route in so short a time is because, unlike the city routes, there are no stairs to climb to upper floors of flat buildings.

When this route was covered with horses, two teams were used every day and hampers full of packages were shipped by express to Bath Beach, about midway of the delivery route, where the wagons called for the packages and began their deliveries. Very often the wagons could not start delivering until 10 a. m.

Details of Car With Which Tests Was Made.

The Greyhound is a one-ton wagon of the regular Lansden type. It weighs 2,460 pounds empty, without battery, and 3,660 pounds with battery; that is, the type A 6 battery weighs 1,200 pounds. The wagon averages about 11 miles an hour actual running time.

The smaller battery, type A 4, has been in use by the same house in one of its two-year-old Lansden 1,000-pound wagons since June 1. In order to test it out, it was first tried on the Coney Island route, already described. It covered 45 miles over heavy, muddy roads, making 175 stops for deliveries, before the battery charge gave out. This showed that it was incapable of serving this route, however, so it was put on the Bayonne route, running down to Bergen Point. It has regularly served this route ever since, covering an average of 43 miles a day and making 125 stops. The voltage reading of the battery after the day's work shows that it is capable of doing 50 miles a day under the same conditions. The wagon leaves these store about 8 a. m. and gets back to the garage at 5 to 5.30 p. m. It is not given any boost during the day—in fact, the drivers are not allowed to boost the batteries in any of the cars. This small battery contains 65 cells and weighs very close to 700 pounds.

Various characteristics of the new battery are commented upon by the superintendent of the garage and others conected with the management of the store under whose direct observation the work of the delivery service comes. The most important is the uniformity of discharge capacity regardless of the age of the battery as shown by the curves and table on this page. This is the chief characteristic, of all Edison batteries, as the dry goods house has one of the early ones (type E 27) that

Digitized by Google

has been in its service for nearly five and one-half years and is to-day regularly doing 35 miles a day. Practically no other work has been done on it in that period except to recharge it with potash every six months, and of course to keep the cells filled with distilled water. This quality, it is pointed out, is of great value, as it relieves the superintendent of deliveries of the mental effort of remembering the capabilities of each battery according to the time it has been in use, so that a battery capable of doing, say, 20 miles, will not be put on a route 30 miles long and get stalled.

EDISON CELL—TYPE "A 6."
Weight, 19.5 pounds.

Charge 7 Hours at 45 Amperes.		Discharge at 45 Amperes.	
Ampere-hour imput	315.0	Ampere-hour efficiency	85.2%
Ampere-hour output	268.5		
Average P. D. of charge	1.692	Volt efficiency	71.1%
Average P. D. of discharge	1.202		
Watt-hour input	533.0	Watt-hour efficiency	60.6%
Watt-hour output	322.7		

Output per pound, 16.54 Watt-hours.

Another quality is that the battery does not heat up much in charging, resulting in lessened evaporation and less frequent refilling. There is no testing with a hydrometer daily, and no use of acid, all that is required being the filling of the cells with pure water, as the potash does not evaporate. The reason for the lessened heating during the charging operation is said to be due in part to the large air space between cells.

Facts From Three Weeks' Service.

During the three weeks that the Macy department store has the Greyhound, it was given severe tests over a number of different routes into the suburbs. For example, on April 16 it went to Coney Island, making about fifty deliveries, and on the same day, without recharging, it ran to Woodlawn and back. Then, to completely discharge the battery, it was run about 10 miles in nearby deliveries in the neighborhood of the store. The distance covered during the day was between 87 and 90 miles. The charging plug had been taken out at 8 a. m. and was not put in until 3.30 a. m. the following day.

On May 5 the wagon was sent to Morristown, N. J. Leaving the store at about 8 a. m. it covered 72 miles out and back, up hill and down, over macadamized roads, making forty-five stops, and returned to the garage by 9.30 p. m., or two hours before a team of horses would return to the stable in Newark after serving the same territory in Morristown.

On another occasion the Staten Island route was served, including Tottenville, at the extreme southerly end of the island. Owingto the hilly nature of the roads there it is asserted by the manager of the garage that 50 miles on the island is equivalent to 80 or 90 miles over level, smooth roads. Yet the wagon covered the route, making sixty stops, and returned, running strong, in five hours' less time than the same deliveries could have been made with teams of horses.

During the three weeks that Macy's had the wagon fitted with heavy A 6 battery the machine was regularly put on the longest route serving suburban territory that is usually handled by horse and express. Besides the Tottenville route, which is 56 miles long, there was covered the trip to Richmond, also on Staten Island, 48 miles; Scarsdale. in Westchester County, north of the city, a round trip of 43 miles; Coney Island, and others, in regular rotation.

The wagon was regularly worked from 14 to 18 hours a day, according to the chief engineer of Macy's, and averaged from 56 to 57 miles a day on one charge, returning regularly still good for 10 miles. It was regularly recharged at night for six to seven hours at a 40 ampere-hour rate.

Delivery experts state that the battery is easily capable of serving the longest and hardest route operated out of New York City and of surpassing the physical endurance of the driver; that is, no driver even with the aid of a boy, could drive the machine, day in and day out, over a longer route and make more deliveries than the Greyhound is capable of.

Those who have supervised the work of the battery are more than enthusiastic over it. They admit that the first cost is high, but to offset this, point out the low cost of maintenance.

Battery Details and Mechanical Make-Up.

While the improved Edison battery has been under test for a long time in vehicles connected with the maker's laboratory, the sample batteries here discussed were put into commercial service so that the performances could be verified under the conditions of trade. Edison's new A type differs from the older Edison battery in the mechanical construction of the positive plate and in the substitution of pure nickel for the graphite formerly used. The general form has not been altered and the negative plate is still composed of nickeled steel boxes of rectangular section filled with oxide of iron. In the new positive plate, however, the active material is contained in nickel steel tubes, about the thickness of a lead pencil and four inches in length. These are formed spirally out of strips of perforated ribbon steel, nickeled, and are reinforced by nickeled steel rings spaced one-half inch apart. The tubes contain alternate layers of nickel oxide and pure metallic nickel, loaded under pressure. The ends of the tubes are crimped, forming a flat at each end which is held fast to the frame of the positive plate by notched strips on the plate. The result is a very stiff plate which could be thrown across a battery room with very slight chances of even bending it. The electrolyte is composed of a 21 per cent solution of caustic soda as before. Aside from the cells a new form of crate has been adopted with bent corners instead of dovetailed, making a very light and stiff construction.

BERLIN'S FIRST AUTO-HEARSE.

Germany is somewhat behind the United States in this branch of automobile utilization, although far in advance of our and all other countries in her different types of war automobiles.

First of Its Kind in Berlin

Nearly every large city in the United States can claim at least one automobile hearse, but the one shown in this illustration is the first to make its appearance in Berlin.

SHOWS RATE OF FUEL CONSUMPTION.

In order that the motorist may at all times be informed as to the efficiency of his car, a London supply house recently has brought out a device known as the "Consumeter," which not only gauges the consumption of gasoline, but also indicates the quantity in the tank at any particular stage of the journey. It is claimed to be a valable adjunct in reliability runs as in addition to the general total, the consumption over any particular roads or in any given time can be ascertained. In appearance it is not unlike an ordinary clock dial speed indicator mounted in a case measuring 5¼ by 3¾ inches so that it does not add greatly to the accessories already on the car.

It would be rather disgusting, says a writer in the London Times, if, after reconstructing all our roads to suit high-powered motors, the wealthy classes, who now use these things, became tired of so vulgar a mode of conveyance and took to aeroplanes as the only thing worthy of smart people. More unlikely things have hapepned.

Digitized by Google

TILLINGHAST PATENT SUSTAINED.

For the third time since its issuance in 1893 the so-called Tillinghast patent, relating to single tube automobile and cycle tires, has been held valid by the courts, a decision having been filed on August 7 against the Continental Rubber Works of Erie, Pa., after almost five years of litigation. The action was brought in November, 1904, by the Single Tube Automobile & Bicycle Tire Co., which owns the patent and which licenses practically all of the makers of single tube tires except the Continental Company. The latter commenced the manufacture of tires of the single tube variety in 1903, and declined to take out a license and pay royalties, taking the position that the Tillinghast patent was invalid and that the company which held it was not in basic control of the art.

Since that time, according to authoritative estimate, the defendant has made about 1,250,000 tires, which according to the decision just handed down in the Circuit Court of the United States, Western District of Pennsylvania, infringe the Tillinghast claims. As the royalty demanded by the complainant from its licenses is 5 per cent, with 15 cents per tire minimum, the amount of damages involved makes a considerable sum. The Continental Rubber Works has given notice of its intention to file a sufficient bond and appeal the decision.

Owing to the growing severity of automobile service, the single tube is not now so largely used on motor cars as previously, and is chiefly to be found on electric vehicles and the older types of steamers. Nevertheless the court decisions so far place it completely under the Tillinghast rights. The first test of the patent was in 1899 when its validity was sustained by Judge Colt in the Circuit Court of the United States, District of Massachusetts. An appeal was taken by Fred Howard Porter, the defendant, and the United States Circuit Court of Appeals, sitting at Boston, concurred in the conclusions of the lower court, although holding the first claim of the patent as being too broad.

MOTOR VEHICLES IN GERMANY.

In the German Empire the number of motor machines for passenger service is given as 39,475, of which 20,928 were motorcycles. For the transportation of goods 2,252 motor cars were registered, 248 of which were motorcycles. For use in business connected with passenger service 16,110 motor cars were registered; for pleasure and outing trips, 15,562; in the army and other government service, 395; for public passenger traffic, 2,340; used by physicians, 4,641. Automobiles in general use for transportation of goods numbered 2,059; in government service, 594; all other uses, 26.

In Alsace-Lorraine and the State of Baden combined the total number of machines is given as 2,441 automobiles and 1,906 motorcycles. Of these, 1,733 were used for business connected with passenger service, 1,700 for pleasure and outing trips, 20 in the army and by public officials, 81 for public passenger traffic, and 574 by physicians in their practice. The number of automobiles in general use in the transportation of goods was 130; by the army and postal service, 7; agricultural and forestry service, 24; all other purposes, 78.

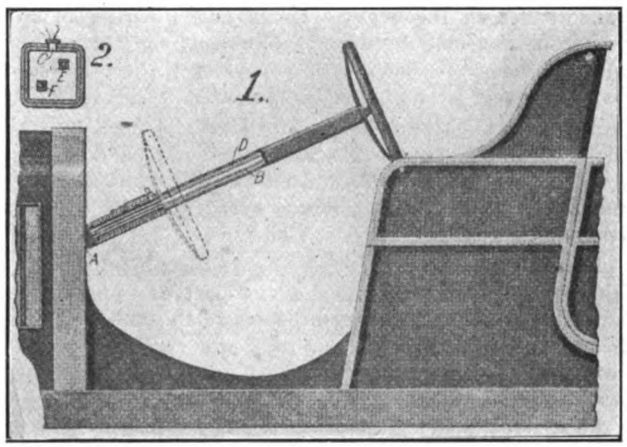
During the year ended September 30, 1908, the number of foreign-made passenger automobiles temporarily in or passing through Alsace-Lorraine was 2,836, of which 2,355 were of French manufacture, 139 Swiss and 119 American.

In the whole of Germany 141 persons were killed by automobiles and motorcycles during the year, 2,630 were injured and 5,069 cases of damage were reported.

Consul Samuel H. Shank sends from Mannheim a description of a new German invention for driving automobiles. It is a so-called "hydraulic driving gear." by which, it is said, the cost of constructing a car is lowered and the weight reduced about 400 pounds.

TELESCOPIC STEERING GEAR.

The most suitable position for the steering wheel of an automobile is to have the wheel close to the chauffeur's seat, and on an axis that lies at about 23 degrees from the horizontal, or even less. Unfortunately, with the steering wheel in this position, it is awkward for the driver of the machine to get into our out of the seat. Furthermore, the steering column acts as a bar to prevent occupants of the automobile from mounting or alighting from the machine on the chauffeur's side. To overcome these objections and yet keep the steering wheel at the most suitable angle, a telescoping type of steering column has recently been devised. As shown in the accompanying engraving, the steering column comprises two hollow members of approximately rectangular form (see Fig. 2), the member A being connected to the steering gear in the usual manner, while the member B, which carries the steering wheel, is arranged to slide



Telescoping Steering Gear for Automobiles.

within the member A. It is not essential that the two members be of rectangular form, but any other form will do, hexagonal, for instance, or oval, which will do away with the necessity of keying one to the other. In Fig. 1 the position of the wheel when the steering column is telescoped is indicated by dotted lines. The steering column may be extended to any degree desired by the driver of the machine, and locked in this position by a spring-pressed pin C on the member A, which is adapted to enter any of the perforations D spaced at regular intervals along the member B. Within the member B are the connections E and F, running to the spark device and throttle control. These connections are also of telescope construction, as indicated in Fig. 2. The inventor of this telescoping steering gear is Mr. C. J. Schoening, Box 112 Honolulu, E. H.

WILL TAKE CHARGE OF CHICAGO BRANCH.

F. A. Lester, who for several years past has had charge of the carriage and wagon department of the Timken Roller Bearing Axle Co., Canton, O., will, upon the first of September, take charge of the Chicago branch of that company. Mr. Lester is no stranger to Chicago, having resided there for about 20 years, and has for a large portion of that time been identified with the carriage and wagon business. Therefore, the change will doubtless be quite agreeable to him and his return to that field will be welcomed by many friends.

WILL REPRESENT LANDERS BROS.

Mr. Will C. Klein, who for several years has represented the Cincinnati Carriage Goods Co. in the Middle West, has severed his connection with this company, and will hereafter represent Landers Bros. Co. in part of this same territory.

Mr. Klein will look after the trade in southern Ohio, Illinois, Missouri, Iowa, Tennessee and Kentucky, making his headquarters in Cincinnati.

Digitized by Google

PAINTING COMMERCIAL AUTOMOBILES AND TRUCKS.

This class of equipment affords the city and town painter with one of the most difficult problems he has to consider. It calls for a large shop space and for special devices to get it in a position to work upon. It would be well enough if one could arrange it conveniently to let such business go to men making a specialty of it—to the garage owners, for instance—who take in painting, as some of them do, as a sort of side line, and who have facilities for handling these leviathan-like vehicles. However it is not always easy to turn such work away without diverting other and possibly very profitable work to one's competitor.

When such work comes to the shop, and it becomes policy to make the best of a bad bargain, first consider the matter of light and locate the vehicle in the best available light. In case the auto or truck is too heavy to raise with the ordinary wagon jack, and to set on the heavy wooden horse usually in stock, procure from the neighboring machine shop a whiskey jack, and with this hoist the machine up and block it there just as the professional mover of buildings would do.

In estimating upon such work this extra labor and expense should be figured in and made an important part of the contract. If the shop can afford a pit, thus enabling the machine to be run directly over it, so much the better. An inch hoist, or just enough to clear the wheels, will suffice.

To clean up the under parts of one of these ponderous jobs take three parts of turpentine and one part of crude oil, mix thoroughly together and use colored waste to apply it. Saturate the waste, and then wet over the parts thoroughly, having first, of course, scraped and flaked off all the hard semi-soft patches of grease and the sticky accumulations with the putty knife and a hook-shape steel scraper. There may be some of these parts which will require scrubbing with soap and water, the parts being first wet over with moderately strong lye. Beat some soft soap into a rich suds and with a sponge go over the parts saturated with lye first. Sponge and rub the parts smartly and rinse with clear water. Let the parts then stand until the day following, or until a later date, as local conditions suggest.

While the cleaning of the running parts is being carried on the body of the car should be cleaned and given a close inspection. If the surface checks are not deep, sandpaper down thoroughly with No. 1½ sandpaper, and coat up with a lead coat composed of three parts turpentine to one part raw linseed oil. This will afford the requisite elasticity and binding property. Upon this coat all required puttying should be done. Above this putty, when dry, apply three coats of roughstuff in as many days. Rub down after the expiration of two or three days, sandpaper, apply color and carry through to a finish in the usual way.

When the surface is found firm and free from cracks except. possibly, surface cracks, it may be sandpapered with No. 1 sandpaper until the ribs and knots of hard dirt and all other things existing upon the surface are knocked down, and some smoothing effect stirs over the face of the surface. Then apply a coat of color, following the same day with a coat of varnish color, then going forward to a finish in the usual way. It is a long and tedious turn of labor to burn the paint from these big wagons, and it should never be done only as a last resort.

In the matter of colors for the commercial automobiles and trucks there are really not many, if any, restrictions. About all the colors seen in and outside of the fashion magazines are used upon this class of horseless vehicles. The inflammatory yellow vies with the reds sufficiently "loud" to excite the admiration of our socialistic friends, and these are interspersed with blues and greens and enough other colors to give everybody a chance to pick a favorite.

The advertising possibilities of the commercial auto and truck are being worked for all they are worth. The painter engaged in this class of work will do well to "feature" the sign writing and display pictorial and ornamental effects. It is being done in the cities and it yill pay any where. All this class of horseless vehicles is painted and finished chiefly with the view of making it severe as an advertising medium. Within the limits of good taste and discretion the painter cannot easily overdo the matter.

THE FRANKLIN TORPEDO.

(Illustrated on Page 227.)

The Franklin Torpedo, a speedy motor car built on lines much like those of the projectile for which it is named, has just been sent out from the Franklin factory in Syracuse. It is for the personal use of H. H. Franklin, head of the company by which it has been made, and it is pronounced the most complete car ever constructed in America.

Along what would be its water line, if the car were a boat, which in its coat of battleship gray it much resembles, the motor car is cigar shaped, presenting as little resistance to the air as an airship. It has a long, low body, the hood of the automobile being fashioned like the bow of a boat and rounding out the whole design. Such a hood is not possible with a water-cooled engine. The exterior of the body is smooth; nothing projects to catch the dust of the highway.

In the carrying out of the dustless construction the Torpedo has an innovation in enclosing with sides, flush with the top of the dash, the occupants of the forward seat as well as the passengers in the tonneau, four altogether. And in front there is only one door, at the left and away from the driver.

The car is capable of making from sixty to seventy-five miles an hour. It is provided with a regular six-cylinder engine and chassis of the forty-two horsepower Franklin cars of 1910 model, with a special gear.

The Torpedo's equipment includes even such details as an electric cigar lighter, special monogrammed stationery, caps, goggles, gloves, maps and toilet articles.

A silver plate displays the name "Franklin Torpedo" on a highly polished Circassian walnut dashboard of rare grain just above the hood. The point of the hood is surmounted by a small silver American eagle.

A circular windshield is an innovation. Its glass is about a foot in diameter and is held by an adjustable nickel standard close before the face of the driver. This was specially designed for the Torpedo.

The electric equipment includes a speedometer light and small electric lights auxiliary to the oil side and rear lights. The headlights use acetylene gas.

The seats are low and heavily upholstered with goat skin of a light chocolate hue. The same material is used for the rest of the interior. Special dust covers covered the seats when the car left Syracuse. The exterior metal work is polished nickel.

The body is made of aluminum, and its battleship gray is striped with pearl gray; on the sides appears Mr. Franklin's monogram. The aluminum is given a rubbed instead of highly polished finish.

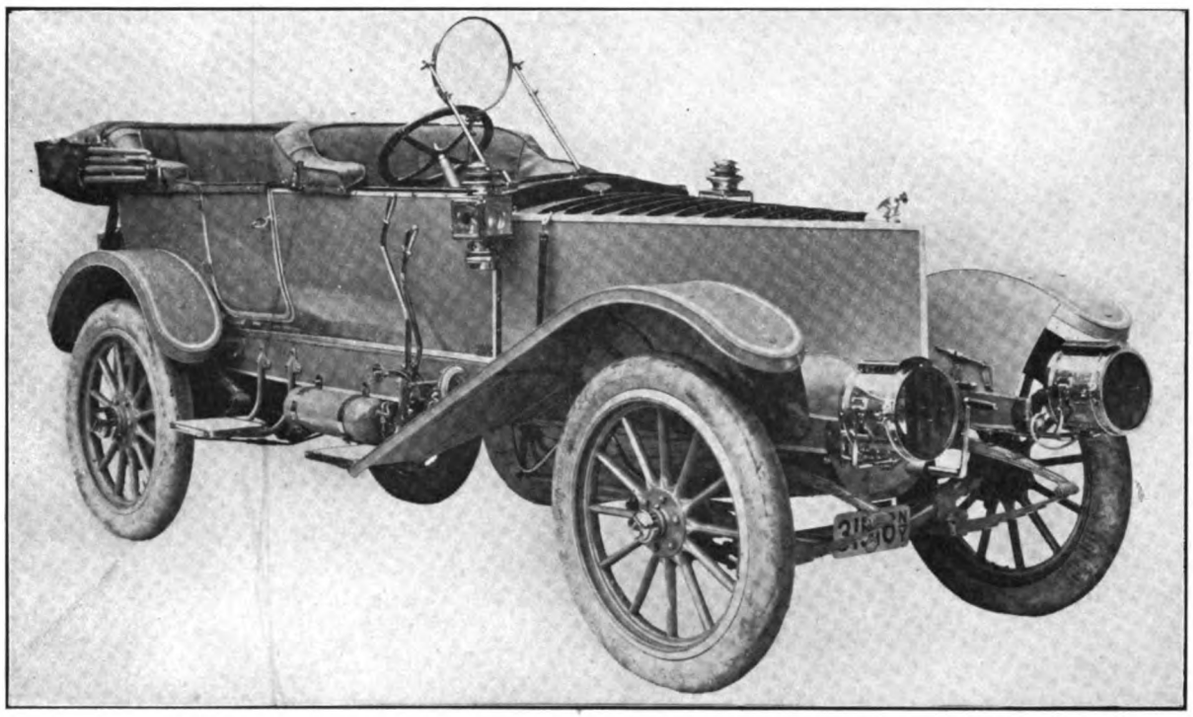
The top, instead of being the regular black, is made of dark blue auto cloth. Long sloping mud guards surmount the forward wheels, harmonizing with the long, unbroken lines of the car; semi-circular ones surmount the rear wheels. A nightingale whistle is carried instead of a horn. The emergency brake and gear-change levers are just without the sde of the car instead of inside.

A circular hood of regular Franklin design is made interchangeable with the one of prow design; the latter provides for the admission of the cooling current for the air-cooled engine by means of a row of openings in the top of the hood.

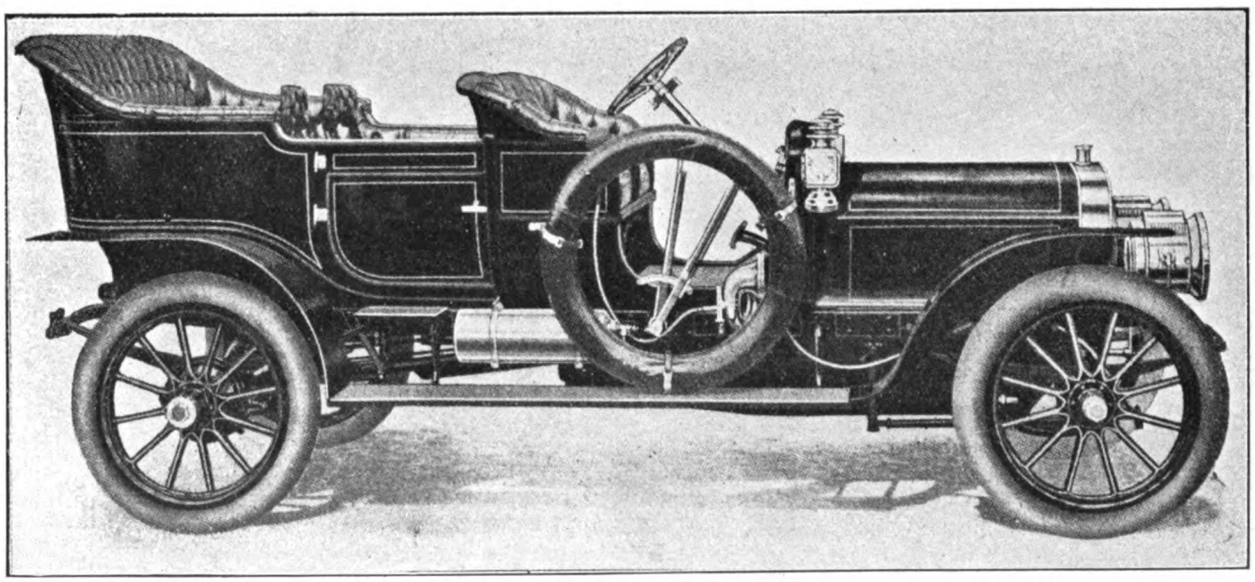
Fire losses in the United States in 1907 represent an annual tax of $2.50 on every man, woman and child in the population. The buildings destroyed equal a street a thousand miles long.

Digitized by Google

Illustrated Automobile Section, September, 1909.

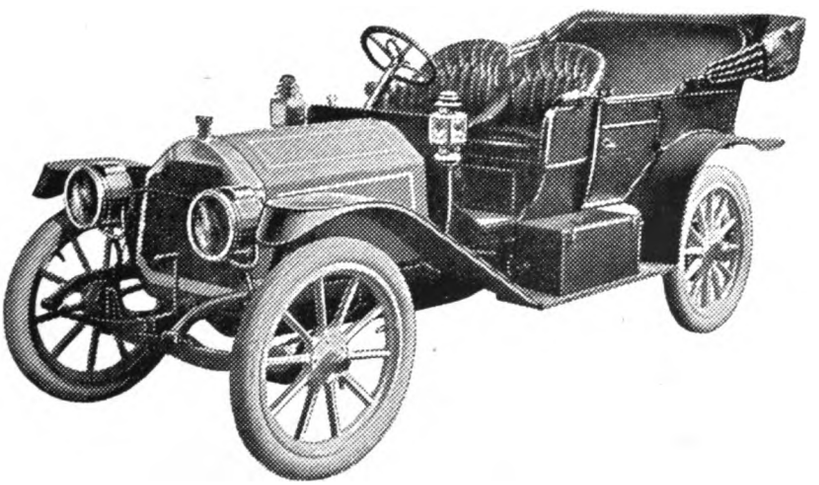


THE FRANKLIN TORPEDO.
Built by H. H. Franklin Mfg. Co., Syracuse, N. Y.
Described on opposite page.

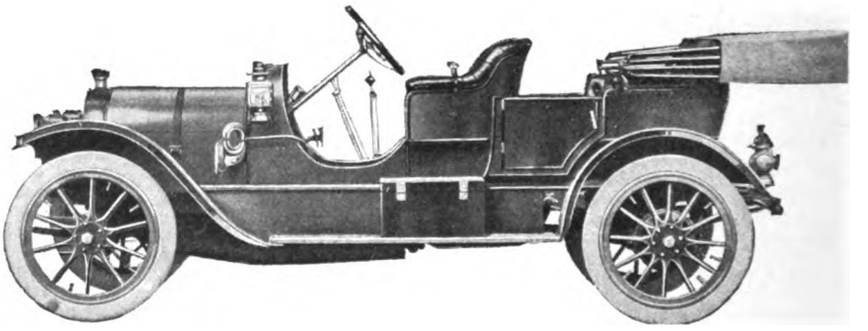


THE EMPRESS.
Built by Johnson Service Co., Milwaukee, Wis.

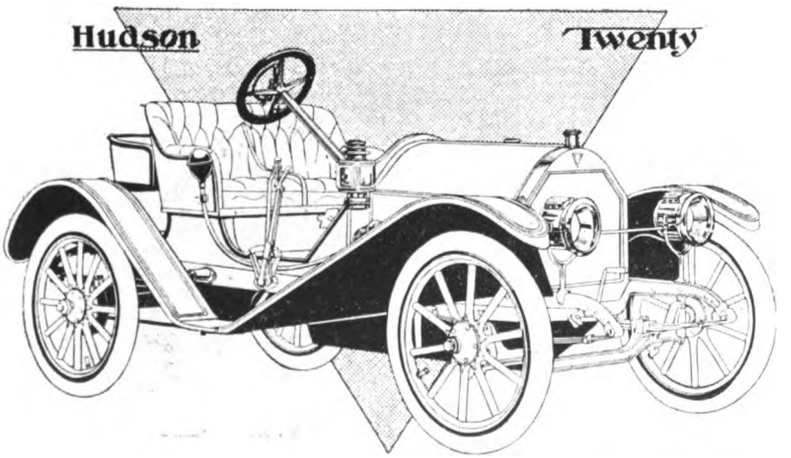
Digitized by Google



THE LEXINGTON MODEL A.
Built by Lexington Motor Car Co., Lexington, Ky.

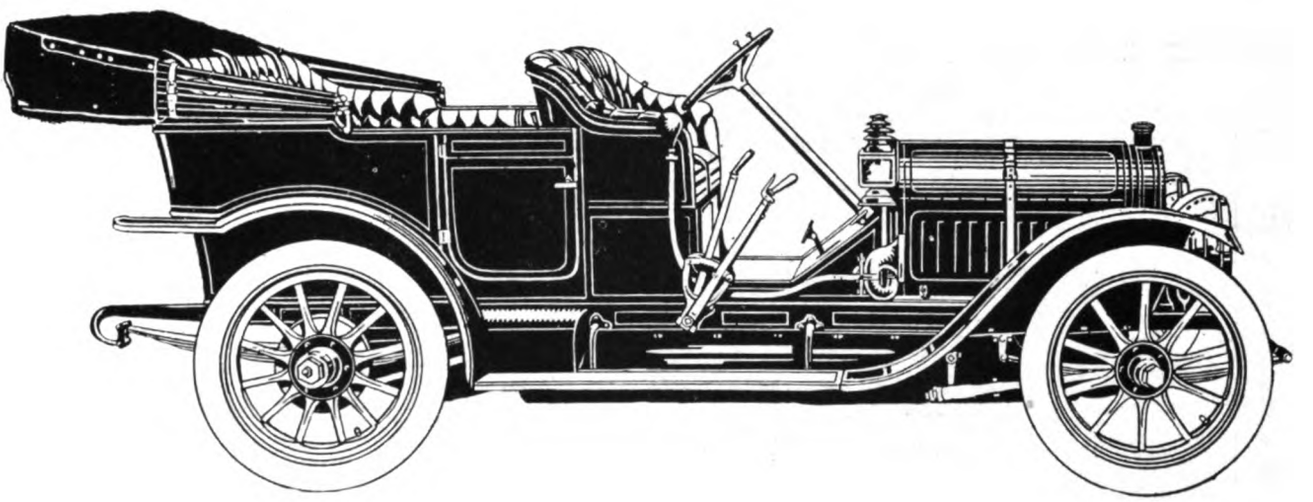


WHITE GASOLINE CAR.
Built by The White Co., Cleveland, Ohio.

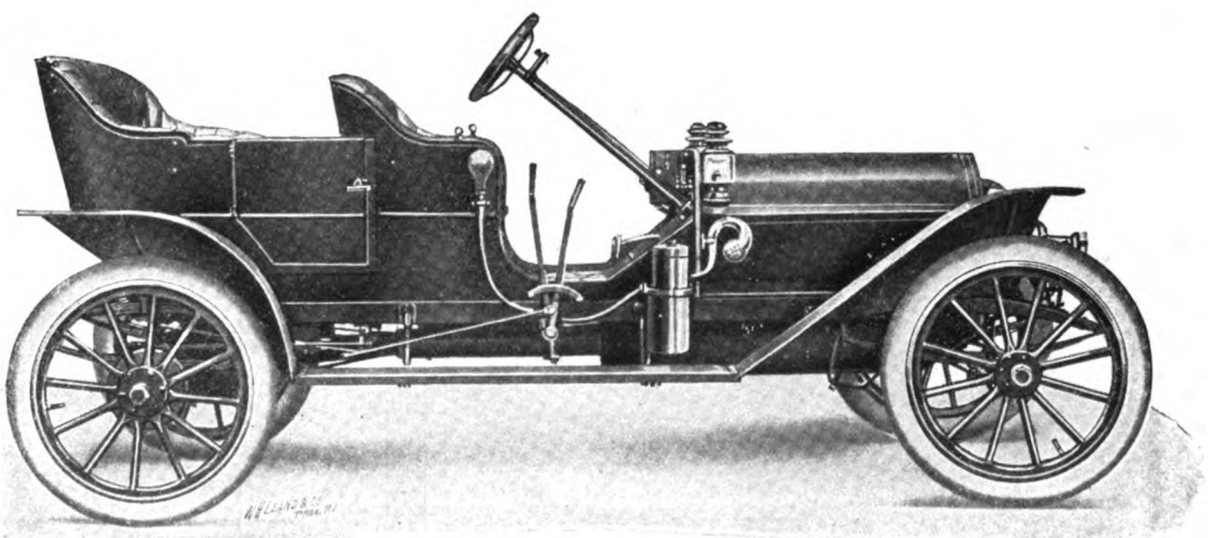


HUDSON TWENTY ROADSTER.
Built by Hudson Motor Car Co., Detroit, Mich.

Digitized by Google



1910 POPE-HARTFORD.
Built by Pope Mfg. Co., Hartford, Conn.



CAMERON AIR-COOLED SIX-CLYINDER CAR.
Built by The Cameron Car Company, Beverly, Mass.

Digitized by Google

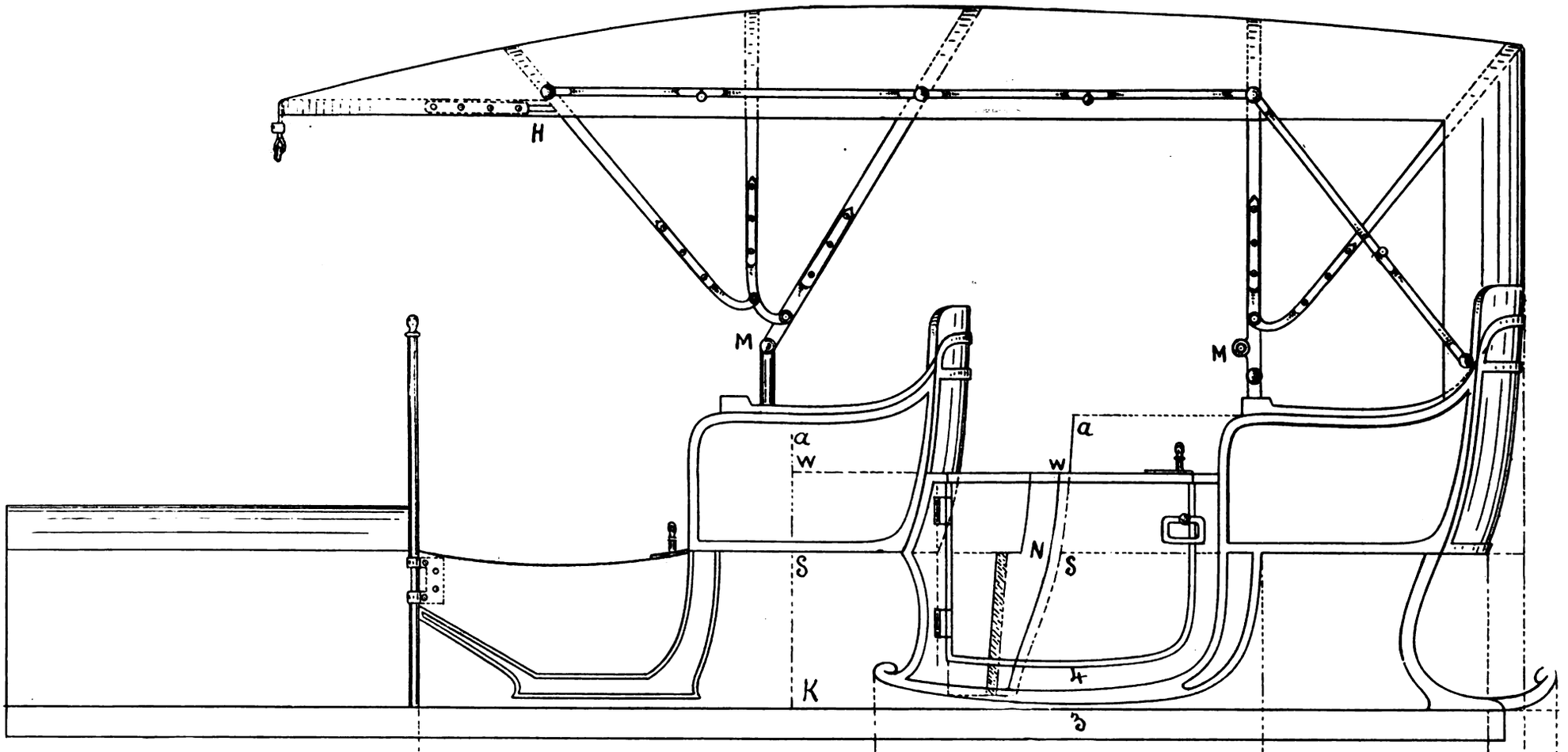


Fig. 1.

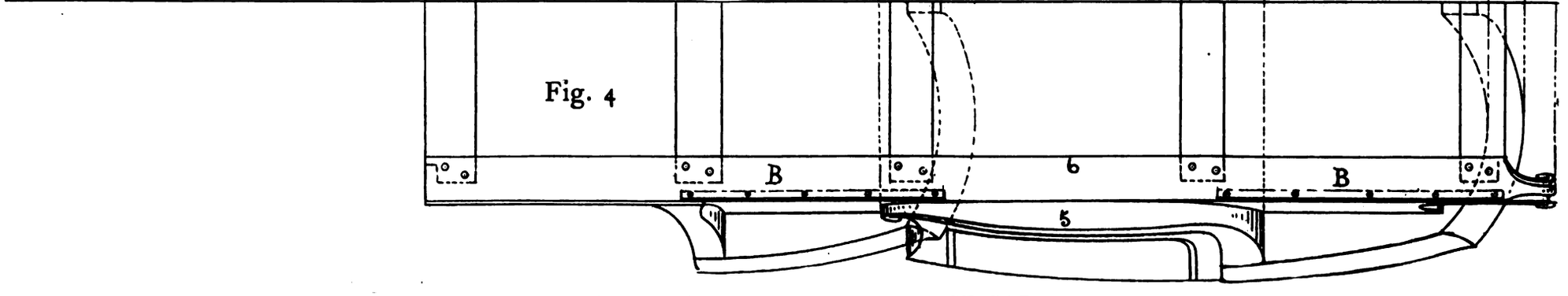


Fig. 4

WORKING DRAFT OF SIDE ENTRANCE CAR.

Described on opposite page.

Digitized by Google

Body Construction and Finish

WORKING DRAFT OF OPEN-SIDE ENTRANCE CAR.

(Drawing on opposite page.)

The open side entrance car molds a favored place with the motoring public. It is more easily built and of readier sale than other designs of car, which makes it safer to build to stock than those of high-class finish and difficult construction.

The car represented in the working drawing herewith is a breakaway in its lines to the Roi de Bilge design which, in side-entrance cars, has held the sway for so long. The quarters of the body are framed up in the same way as a Victoria, both back and front, while the backs are double curved to individualize the seats, which is more comfortable than a continuous back line, because in the run of a car at high speed the stability of seating comfort is altered, and a jostling lifting given to the

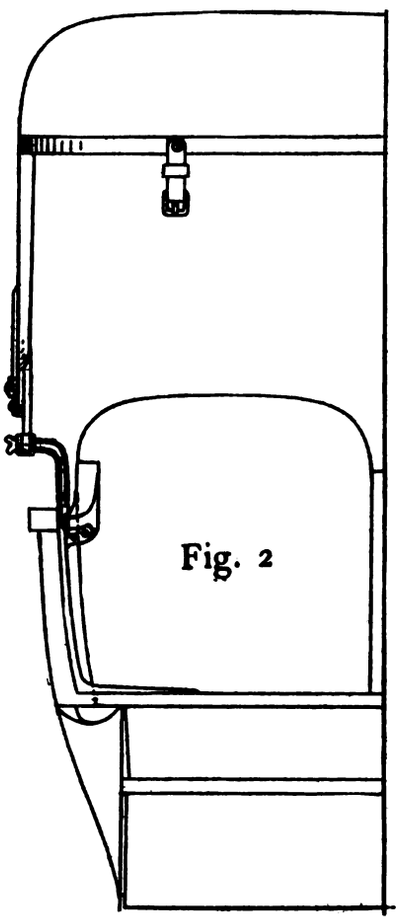


Fig. 2

body of the occupants which is a most disagreeable condition of contact where pleasurable comfort is expected.

As a check to this, individual seats are to be recommended, and this is why they are introduced into the build of the car herewith. The door is kept below the line of the body pillar, and so relieves the back quarter.

The width of the body on the hind quarters is greatest across the front pillars, the reverse to the Roi de Bilge bodies, which are wider behind and showing a heavy projection from the boot side.

In designing the car underway it has been kept in view that the coach maker's road carriage work should strongly approximate to the motor body, and thus feed the one from an inspiration of the other.

In the lines of the body the Victoria type of outline predominates, while the door is on the lines of the first brougham design in shutting on the top of the bottomside. The bottomside and front and sham door pillar are framed together, while the solid boot sides are boxed into these both back and front The bottomside is, of course, cut out in one piece to form the solid side, bottomside, back and front.

The back of the body, and on the chauffeur's seat, is made in sectional curves to give individual seats to the occupants. This design of seat is more restful for the body, while it enables the rider to keep the seat with firmness and without side jolting to the discomfort of a fellow occupant. The back is framed and the panels gigger-grooved into the molding. A narrow center pillar is framed to the seat and top rail to take each inner side of the panel against its cheek, to which the panel is pinned. The molding on the back rail is boxed out in the solid, as shown in the drawing.

The solid boot sides are boxed into the sham door pillar and into the shutting pillars of the body and half check framed to the bottomside from underneath. The front seat quarter is framed and panelled the same as the back quarter, but a filling up piece is fitted to the side and ogeed out to a one-quarter inch thickness at the bottom, and the bracket line formed in molding, which is planted on to the solid side. A windage door is fitted to the front. The hinge is made with boss clips to take the standard iron, and with square foot to bolt to the door, as shown by chain line, while the door is held with a lever spring lock.

The body door is framed to the turnunder of the shutting and standing pillars and fitted with two and one-half inch brass butt hinges top and bottom, also with a lever spring lock. The full strength of the pillars is shown in section in the elevation, on the line AA and SS from the vertical line AK. These lines show the full width of the body over top of body pillars, and over seat line behind, while the lines WW and SN show the width across the front of body on the pillars at these points. It will be seen that the standing and shutting pillars are panel boxed down, and the outline body molding worked on, as is the standing pillar on the hind quarter line, while the hind corner pillar of the quarter is finished in its projection from the body side with a filling up pillaret, which terminates at the chassis end with a one-quarter inch base, as shown in the section, Fig. 3.

The canopy is made full extension, inter-elongate and removable. The front hood unscrews at the hinge prop M and takes the lug eye of the back hood at M with individual bolt or forged bolt. The whole hood can thus be held behind without encumbrance, and if it is necessary the hood can be let down by the side joints, the slats resting on the body props, as drawn on the half back section, Fig. 3.

The front horizontal bow slat H is attached to the head slat with a sliding rod fitted with a swivel joint, which allows the slat to slide down the inside of the head slat on a fixed rod to which the swivel boss hinge is attached. When the slat is slid down the rod it can be hinged up level with the body slat, and the hood thus packed together is transferred to the back hood, as already described. The canopy is held taut with horizontal side joints, as explained in the elevation.

The covering of the canopy is of waterproof twill cloth. The color most in fashion is a fawn hue, the edges being welted all round. The back curtain part comes up to the elbow point of the body, and is forced to the body with eyelets which hook

Digitized by Google

on to knobs driven into the back of the body on the back rail line for this purpose.

Fig. 1 shows the full elevation with a cross half section of the body's width, and the shape of the turnunder pillar, and its substance standing back from the side after the side has been boxed in to both the front and standing pillars. The full design is shown in its practical working, together with the hood's fixing in slats and fittings.

Fig. 2 shows the front half section of body, the horizontal hood slat and strap buckle for steadying the hood to the chassis with a strap at each corner.

Fig. 3 shows the back half section, and the design of the individual seat in its molding outline and the widths of the body at its points of finish.

Fig. 4 shows the half plan of the body, and the lines of its

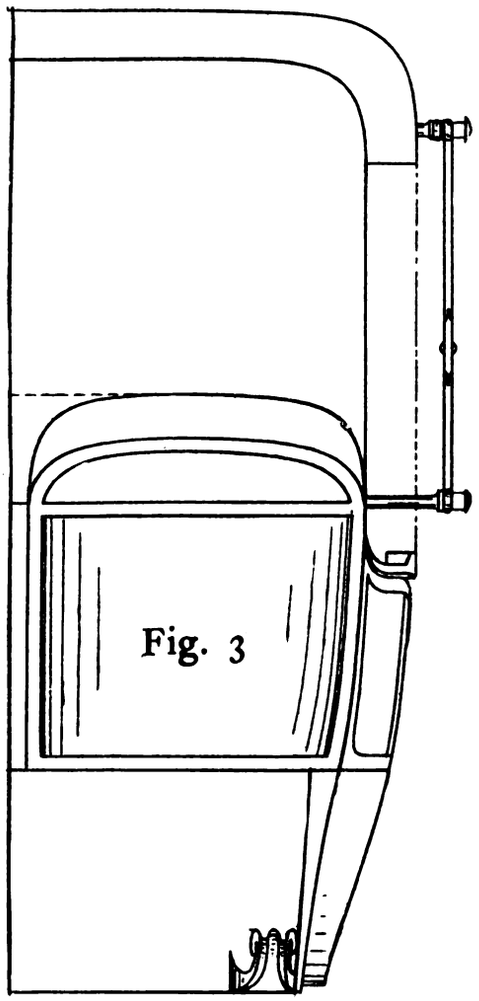


Fig. 3

construction in projection. In this section every point is placed practically before the body maker and all he has to do is to read it off correctly and dress the framing up to its proper angles on its position, surface and shoulder it to the lines of contour. The front and hind quarters, bottomside and corner pillars, are best got out in one piece. The body bottomside, to which the front hinge pillar and the shutting pillar are framed, is got out deep enough to the formation of the door line, the panel part being boxed down and the molding thrown up.

The boot bottomside, back and front, is, of course, a continuation of the doorway piece, but cut down to one and one-half inch thick and half check framed into the sides.

Getting the bottomside out in the solid, and cutting it up in this way, works into heavy plank and time, but it makes the best job, and takes the vibrating strain from the chassis much firmer than if the bottomside were half check framed in sections. The shape and line of the bottomside, and its framing to the solid sides, are shown in the half plan. The widest part of the bottomside on the bottom is from five to six at the center of the doorway, and its greatest depth, with one-quarter inch added for the door check, is from three to four in the elevation.

The sizes are: Full length of body on chassis, 8 feet 1 inch; from dash to front seat, 24 inches; width of front seat on the straight line, 19 inches; round on ditto, 3 inches; width of door, 22 inches; width of hind quarter on seat, 20 inches; round on ditto, 3½ inches; length on elbow line, 21 inches from false elbow point; length of front quarter on the elbow line 19¾ inches from false elbow piece; depth of hind quarter over moldings on pillar line, 12½ inches; at elbow point 17 inches.

Depth of front quarter over moldings on pillar line, 12½ inches; on elbow point, 16½ inches. Height of front back seat over all, 22 inches; hind ditto, 24 inches, outside measurements.

Depth of boot sides, 14 inches; length of bracket bottomside piece, 17 inches; length of bracket, 12 inches.

Width of body on bottom over boot sides, 36 inches; on top of side, 38 inches; width of body on hind seat at back, 42 inches; on top across elbows, 4½ inches; width across pillars of hind quarter 4 feet 3 inches; on seat line, 4 feet. Width across front quarter seat, 46 inches; on top of pillars, 48 inches. Width on back of seat, 40 inches; at elbow point, 43 inches. Full length of canopy, 9 feet 3 inches; height from seat to top of slats, 4 feet.

CHOICE OF VARNISH FOR THE AUTOMOBILE.

The automobile varnisher cannot well be overexacting in his choice of varnishes. And if he be discriminating, and willing to pay what a really fine varnish costs, he need encounter no difficulty in getting a varnish about as nearly perfect as human ingenuity, and the accumulated experience, and the most advanced scientific manufacturing knowledge can make it. And in this matter of finishing the automobile there can possibly be no middle ground—the best is none too good. The service to which a varnish is exposed upon the massive bulk of the automobile is of the most exacting imaginable sort. The swaying and oscillation and "jouncing" to which the surface must respond is fairly incredible, and it calls for a body of varnish at once in harmony with the coats of color and pigment supporting it, and sufficiently elastic to hold up bravely against the terrific body strains without fracturing its film.

Hard usage, however, does not wholly come as a result, or in the form, of hard driving, regardless of highway conditions.

The "chauffeur" appears, as a rule, to have a supreme contempt for any reasonable kind of care-taking of the surface. If the machine is forced through mud sloughs, rain storms and all sorts of weather conditions inimical to the finery of the varnish, and comes to the garage flecked with mud and road accumulations, it is the rare care-taker who sets about immediately to place the vehicle in position and bathe it off in clean, cold water, thus easing the strain from the varnish and flushing away the poisons and other deleterious substances which both spot the varnish and attacks its lustre. The chauffeur prides himself on being a machinist, capable of doing daring mechanical stunts, but he has little respect, and shows less, for the surface of varnish.

Here, then, is the reason why the automobile painter should exercise the finest discrimination in buying and using varnish. It, moreover, is additionally the reason why he should sound a note of warning to the automobile owner, and to all parties involved in taking care of the horseless carriage, in regard to giving the varnish such treatment as will increase its durability, its lustre and its general usefulness.

There are some things, too, in connection with this matter of making varnish do its best, wherein the painter is directly responsible. As for example, the storage of varnish in the shop. It should always be kept upon a shelf well up toward the ceiling, and in a warm, dry section of the shop, where the

Digitized by Google

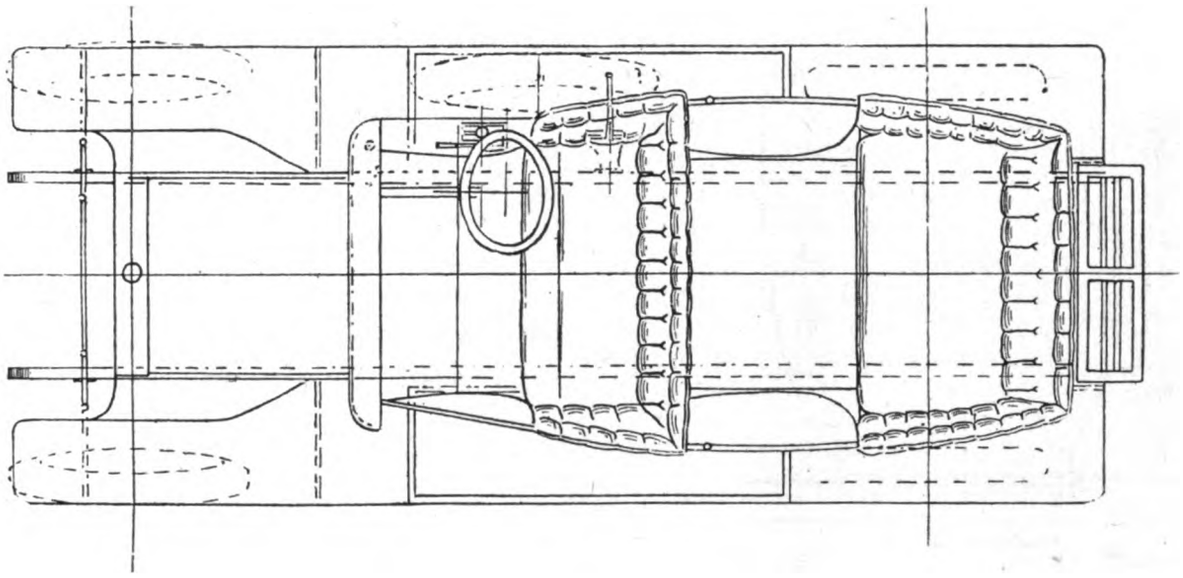
temperature is uniform, and where other conditions are of a nature to promote its usefulness. It is a wise provision to buy it ahead of demand, and to avoid shipment, so far as possible, during cold weather. Varnish always suffers more or less shaking up in transportation, in which case it needs time to settle out and resume its normal state of repose before use. Flowing and general working qualities are improved thereby. About half an hour before using the varnish remove the stopper from the can, thus permitting the expulsion of certain gases which detract from its working qualities.

Varnish should always be strained before using. There are times when it does not appear to actually need it, but straining is a safeguard. Having exercised all precautions in the care and use of varnish it remains for the painter to instruct the party responsible for the care-taking of the automobile how to promote its brilliancy and preserve its structure during its life of service.

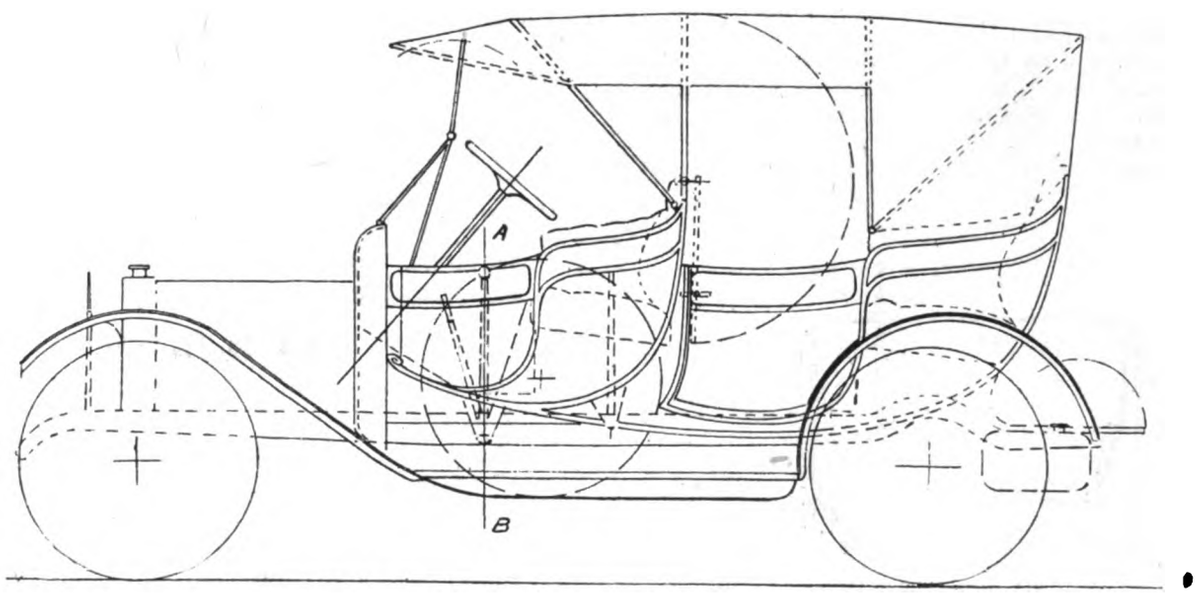
The General Motors Co. soon will begin the construction of a new line of motor trucks in the old Buick plant in Jackson, which it has been renovating and refitting during the last few months. Operations will be begun soon after September 1.

A NEW TYPE OF ALL-WEATHER CAR.

By the kind permission of Mr. Mervyn O'Gorman, M.I.M.E., M.I.E.E., we are able to reproduce the leading details of a special design of motor body which has several points worthy of attention, says The Automobile & Carriage Builders' Journal. Behind the driving seat is erected a hinged glass frame which may be lowered so as to lie behind the front seat in the manner indicated in the side elevation. This frame is fixed in position, when up, by a steel pocket piece and clamp, and may be folded up or down whether the hood is up or not. On the side of this frame are one or two turn buttons to which a curtain occupying the position of a door light is attached, and it is provided with a talc window. There are also a number of turn buttons on the pillar or folding stick, immediately above the hind standing pillar, which are also used for holding the curtain. The top edge of this door curtain is fixed to a light lath of wood, which, though it forms a part of the curtain, terminates in a light half hinge which is detachable from a corresponding half hinge on the stick to which one side of the curtain is attached. When the front turn buttons are undone, this top lath and hinge enables the door curtain to fold open with the door. The hood is



FULL PLAN, SHOWING CONTINUOUS SIDE SWEEP.

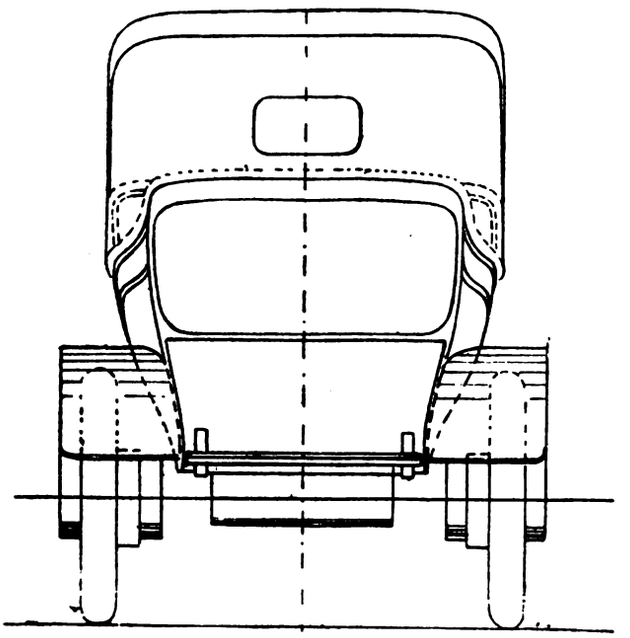


SIDE VIEW OF THE CAR, SHOWING TRAVEL OF GLASS FRAME, COVERING FULLY EXTENDED, AND POSITION OF SEATS.

Digitized by Google

carried over the driving seat, and is attached to a rail which comes over the top of a sloping wind sceern. This rail is held forward by two phosphor-bronze stays, which take the place of the straps often used with cape cart hoods.

The passenger may open the door from the inside because the lower edge of the curtain is not fixed by turn buttons, but by a

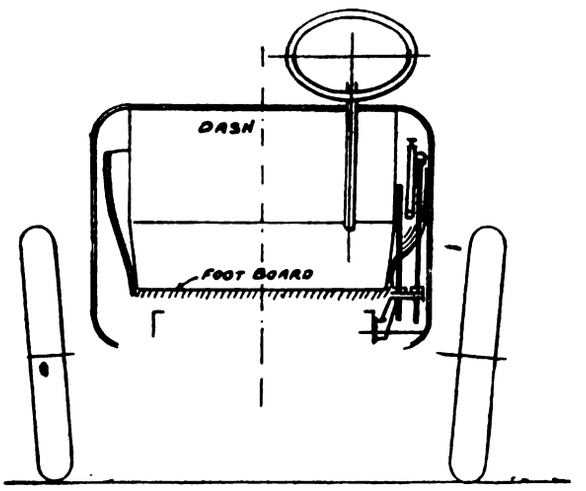


FULL BACK VIEW OF MR. O'GORMAN'S DESIGN.

strip of spring steel slipped into two eyelets on the top of the door. This can be detached from inside, thereby giving access to the turn buttons, but, as Mr. O'Gorman suggests, a servant is usually carried with the car, so that this small inconvenience is of no great consequence.

The rear portion of the hood is, we understand, fastened down to the elbow and back rail as in a landaulette, and on reference to the full plan given it will be seen that the side sweep is maintained from back to front.

The great advantage claimed for this type of body is that the



SECTION ON A.B. (SEE SIDE VIEW.)

user has a weather proof car, which, instead of weighing as much as a landaulette, and therefore expensive to tour with and slow on hills, he has a car body which should only weigh about 3½ cwt. This, when made complete with cushions, roll over and squabbing of comfort-giving thickness, and high wind doors, should give luxurious travelling for either touring or town work.

BONNER'S FAMOUS ADVERTISEMENT.

When the New York Ledger was wavering on the brink of failure Robert Bonner, the proprietor, sent to the New York Herald a brief advertisement, to be set up in a single line. So Greeleyesque was Mr. Bonner's handwriting that the advertising manager interpreted the directions as ordering the copy be run in full page, which instructions he obeyed, though marveling greatly. The Herald came out the next morning with one whole page devoted to the crisp adjuration to read the Ledger's new story. The effect upon Mr. Bonner was almost fatal, first from chagrin at the thought of the possible bill, then from amazement as subscriptions began to pour in and finally from satisfaction as they continued to flood the office until the fortune of the publication was made. The novel though accidental device had struck the public's fancy. Mr. Bonner was hailed as the pioneer of a new and daring theory of exploitation, and the advertisement gained tenfold currency by being commented upon as a feature of the news.—Collier's.

THE EFFECTS FELT ALREADY.

It is an open secret that large stocks of hides were ready to bring into our ports or be released from bonded warehouses as soon as the new revenue act was signed. Tanners say they have already begun to realize the tremendous advantage of free trade in hides. They have offers from all parts of the world and feel no longer will they be compelled to buy domestic hides at exhorbitant prices. The first effect of the new law was to induce a sentimental advance in all the hide markets of the world, but the equalizing forces are at work and hides will be bought and sold under the law of supply and demand without artificial stimulus or restraint.—Hide and Leather.

LEATHER EXCHANGE BUILDING PROBABLE FOR ST. LOUIS.

St. Louis will in all likelihood have a Leather Exchange Building. The project is well under way and negotiations are practically closed for a long term lease on the property at 1427 Lucas Avenue. The plan has been suggested by the fact that the shoe jobbers are moving westward, and it is proposed to concentrate all the sales forces of the various tanneries in the new building in the same district. It is said that from ten to fourteen leather and findings agents have already signed to take space in the new building, which is being promoted by members of the local trade.

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, five cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

HELP WANTED.

Wanted—Salesman in vehicle and implement trade to handle side line of buggy tops, etc. Liberal commission paid. Write at once to Bauer Bros. Mfg. Co., Cincinnati, Ohio.

FOR SALE.

For Sale—Big bargain. Largest carriage works in middle western town of 40,000 population. Doing splendid business—$3,000 worth last month. Have three fires working. Employ five painters, trimmer and woodworker. Build all kinds of new work. Building can be rented very cheaply—$55 per month. Stock invoices $5,000, but will sell for $4,000 cash, as must get out of business on account of sickness in family. Address Box 447, care The Hub, 24 Murray Street, New York, N. Y.

PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 608 F Street, Washington, D. C. Established 1883. I make an investigation and report if a patent can be secured and the exact cost. Send for full information. Trade-marks registered.

Digitized by Google

SATISFIED CUSTOMERS

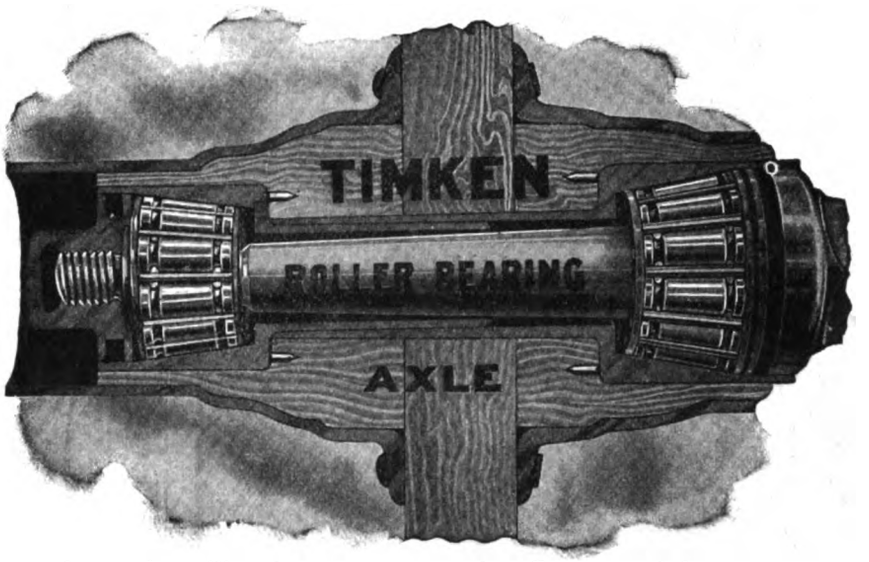
Did you ever have a customer express regret at having

TIMKEN ROLLER BEARING AXLES

on his vehicle?

Sometimes it is difficult for a buyer to make up his mind to get the best, but when he does he never regrets it.

When you sell vehicles equipped with TIMKEN AXLES you make more money—your customer is always satisfied.



TIMKEN ROLLER BEARING AXLES

reduce draft 50 per cent, save wear and tear on horse and vehicle; save on feed bills; are simple, durable and dustproof; require oiling but once a month. Guaranteed for two years.

Write for catalog and prices.

TIMKEN ROLLER BEARING CO.

Branches
10 E. 31st Street, New York
429 Wabash Avenue, Chicago, Ill

Canton, Ohio.

The Fairfield Rubber Co.

Manufacturers of Carriage Cloth, Imitation Leather, etc. For Automobiles and Carriages

Fairfield - - - Connecticut

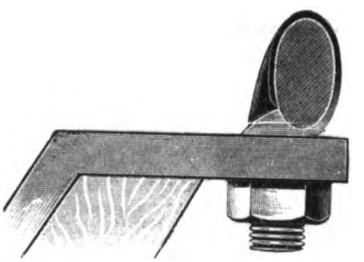
ESTABLISHED 1886.

Correspondence School of Carriage and Motor Carriage Drafting

A thorough, practical tuition is given through this correspondence school. The theory and practice of construction, bookkeeping, perspective. Many men now hold good positions through taking the courses of instruction.

Principal, THOS. MATTISON,
Hillside Avenue, Bitterne Park,
Southampton, England.

Author of "The Coach Body Makers' Guide," $3.00; a practical treatise on "The Suspension of Carriages," "Bookkeeping," and other carriage building works.

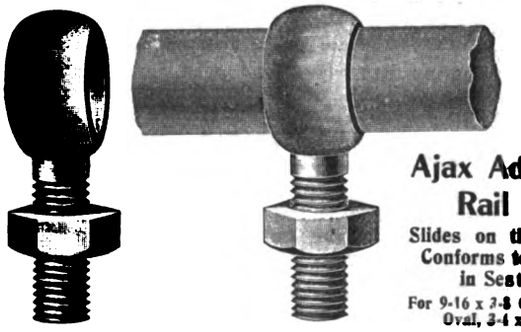


ALLEN'S ADJUSTABLE RAIL NIB

PATENTED

Readily Adjusted Absolutely Secure

For 9-16 x 3-8 Oval, 5-8 x 3-8 Oval, 3-4 x 3-8 Oval



Ajax Adjustable Rail Nibs

Slides on the Oval and Conforms to variation in Seat Irons.

For 9-16 x 3-8 Oval, 5-8 x 3-8 Oval, 3-4 x 3-8 Oval.

CORTLAND FORGING COMPANY

CORTLAND, N. Y.

Digitized by Google

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

Let us send you Catalogue and Price List.

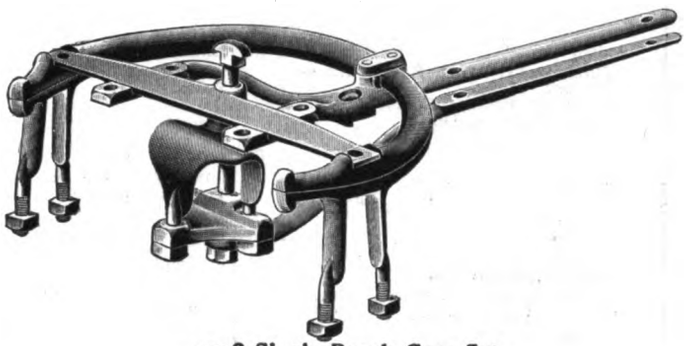
American Roller Bearing Fifth Wheel Co.

745 THIRD AVE., BROOKLYN, N. Y.

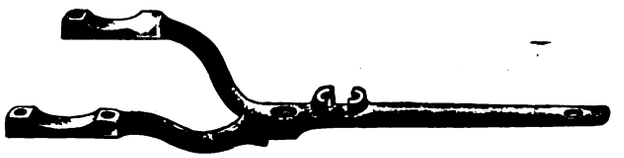
INDEX TO ADVERTISEMENTS.

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.



Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland, Pa.

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Please mention "The Hub" when you write.

Digitized by Google

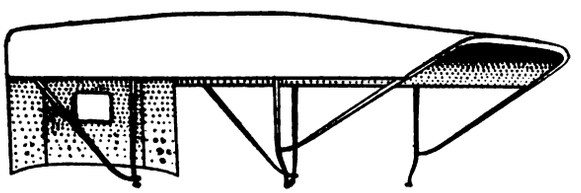
TOPS and Upholstering

FOR

AUTOMOBILES

AND

HORSE VEHICLES



MANUFACTURED BY

Ball Buggy Top Co.

YORK, PENNSYLVANIA

6,000 U. S. ARMY McCLELLAN SADDLES

from Government Auction Sale, on change of regulation from black to russet leather covering. Genuine Rock Island Arsenal made trees, fine black leather covered with brass rings and mountings, coat and stirrup straps, raw hide cinch straps, web cinch girth, large tread wood stirrups, in second-hand, serviceable order. **The Strongest, Best and Easiest Riding Saddle Made.** For a limited time we offer these fine saddles at the bargain price of **$4.95 each,** with trade discount for case lots.

Our 292-page illustrated catalogue and supplement, giving full particulars of our immense stock of Army and Navy Auction Sale Bargains, mailed for 15 cents. (Stamps.)

FRANCIS BANNERMAN,

501 Broadway, New York City.

The Tires for Satisfaction

Goodyear Wing Carriage Tires and Goodyear Eccentric Cavity Cushion Tires with canvas guides are tires that wear —that give satisfaction and increase the dealer's trade. For all GOODYEAR tires are made of new, pure rubber, not of reclaimed "rubber" from the junk heap, nor any low grade. They sell easily because they save the user money—which pleases him—and he tells his friends.

Write today for free booklet showing how Goodyear Carriage Tires are built. Ask for sample section.

THE GOODYEAR TIRE & RUBBER CO., Canal Street, Akron, Ohio

Boston	Philadelphia	Cleveland	Buffalo	Denver
Los Angeles	New York	Chicago	Detroit	St. Louis
Cincinnati	San Francisco	Pittsburg	Atlanta	Washington

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.
Dalsell Axle Co., South Egremont, Mass.
Timken Roller Bearing Axle Co., Canton, Ohio.

Bodies, Seats, Etc.
Woodman, Joel H., Hoboken, New Jersy.

Bodies in the White.
Miller Bros., Amesbury, Mass.
Schubert Bros. Gear Co., Oneida, N. Y.

Bolts and Nuts.
Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.
Wiese & Co., Wm., New York City.

Carriage Forgings.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.
Gifford & Son, John A., New York.

Carriage Goods.
English & Mersick Co., New Haven, Conn.
Fairfield Rubber Co., Fairfield, Conn.
Gifford & Son, John A., New York.

Dashes, Fenders, Rails, Etc.
McKinnon Dash Co., Buffalo, N. Y.

Fifth Wheels.
American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Finished Vehicles.
Studebaker Bros. Mfg. Co., South Bend, Ind.

Hubs.
American Wood Block Co., The, Delphos, Ohio.
Koller & Co., J. B., Mechanicsburg, Pa.

Jacks.
Hankinson, J. V., Franklin, O.

Lamps.
Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Machinery and Tools.
Barnes Co., W. F. & John, Rockford, Ill.
Porter, H. K., Everett, Mass.

Miscellaneous.
Standard Oil Cloth Co., New York.

Ornaments.
Palm, Fechteler & Co., New York, N. Y.

Rubber Tires.
Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Kokomo Rubber Co., Kokomo, Ind.
Stein Double Cushion Tire Co., Akron, O.

Shaft Couplings and Anti-Rattlers.
Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Metal Stamping Co., New York City.

Springs and Gears.
Fitch Gear Co., Rome, N. Y.
National Spring and Wire Co., Albion, Mich.
Schubert Bros. Gear Co., Oneida, N. Y.
Spring Perch Co., Bridgeport, Conn.

Spokes.
Bimel-Ashcroft Mfg. Co., Poplar Bluff, Mo.
Koller & Co., J. B., Mechanicsburg, Pa.

Trimming Materials.
Stevens & Sackett Co., New Haven, Conn.

Varnishes, Paints and Japans.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Masury & Son, John W., New York and Chicago.
Moller & Schumann, Brooklyn, N. Y.
Pierce Co., F. O., N. Y. City.
Smith & Co., Edw., N. Y. City.
Standard Varnish Works, New York City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

White Lead.
Eagle White Lead Co., Cincinnati, Ohio.

Wheels.
Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.

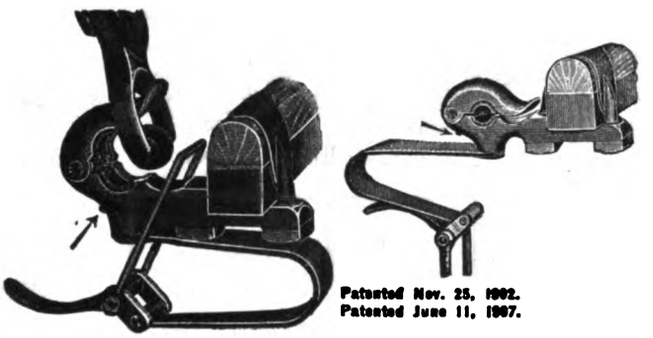
Wheel Stock, Bent Wood, Etc.
Crane & MacMahon, New York.
Koller & Co., J. B., Mechanicsburg, Pa.
Tucker Wood Work Co., Sidney, Ohio.

Digitized by Google

Eccles Ball Bearing Couplings

ALL OUR COUPLINGS ARE SHIPPED OUT WITH TWO PIECE BUSHINGS, FASTENED IN THE COUPLINGS

WHEN BUSHINGS ARE WORN OUT BY LONG USE, THEY CAN BE INSTANTLY REPLACED AND FASTENED INTO THE SOCKET BY OUR SPECIAL PROCESS



Patented Nov. 25, 1902.
Patented June 11, 1907.

THE SPRING IS PIVOTED AT THE FRONT SO THAT IT CAN BE TURNED OUT OF THE WAY OF THE WRENCH WHILE CLIPPING COUPLING TO THE AXLE.

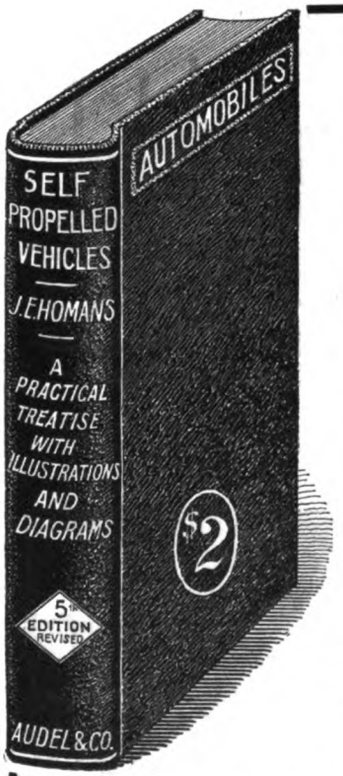
No Lost Bushings when you Use Our Couplings

We Make a Full Line of Carriage and Wagon Forgings

RICHARD ECCLES COMPANY

Catalogue No. 15 is our latest

AUBURN, NEW YORK



"Self-Propelled Vehicles"

Fifth Edition, Revised.

A practical treatise on the theory, construction, operation, care and management of all kinds of Automobiles.

By

JAMES E. HOMANS, A.M.

Contains 608 pages and upwards of 500 illustrations and diagrams, giving the essential details of construction and many important points on the successful operation of the various types of motor carriages driven by steam, gasoline and electricity.

This work is now the accepted standard, explaining the principles of construction and operation in a clear and helpful way. This book will be sent postpaid to any address in the United States, Mexico or Canada upon receipt of $2.00.

Address

TRADE NEWS PUBLISHING COMPANY

24 Murray Street, New York

J. B. Koller & Company

Manufacturers of all kinds and sizes of

Finished Spokes and Bent Rims

Also all kinds of

SLEIGH, SLED AND BOB SLED RUNNERS

MECHANICSBURG, PA.

MILLER BROTHERS

Builders of

CARRIAGES

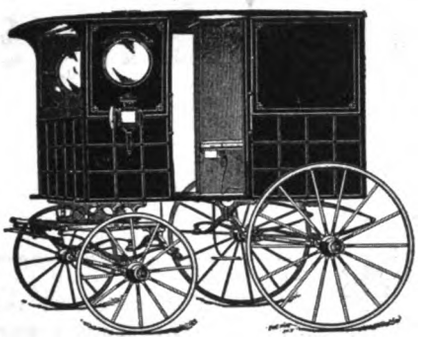
IN THE WHITE

AND

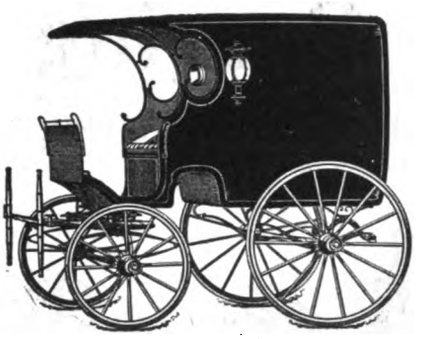
Automobile Bodies

AMESBURY, MASS.

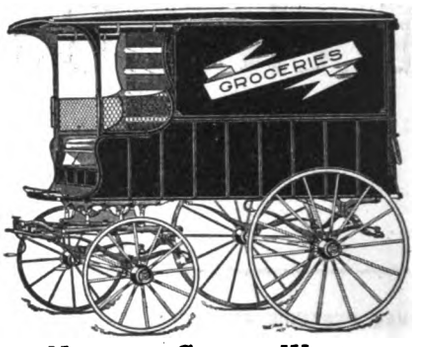
Digitized by Google



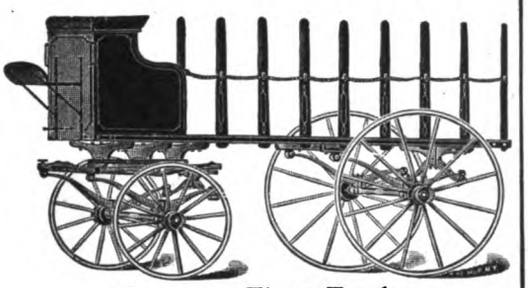
No. 112.—Milk Wagon.



No. 111.—Altman Wagon.



No. 113.—Grocery Wagon.



No. 122.—Flour Truck.

Electrotypes

of the vehicles presented on this page will be forwarded on receipt of

75 cts.

for each cut, to any address. Postage prepaid.

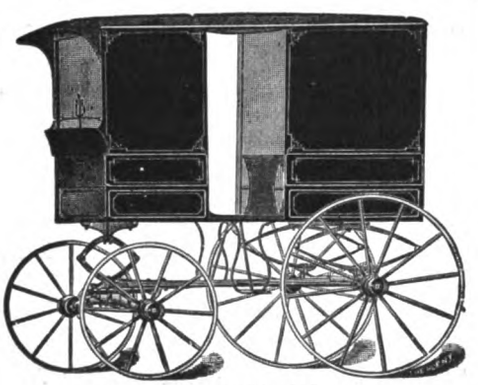
Catalogue

containing nearly 200 illustrations of carriages, wagons, sleighs, and miscellaneous cuts will be sent upon application.

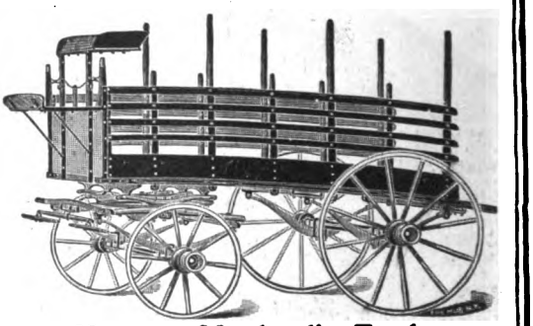
Trade News Publishing Co.

24-26 MURRAY ST.
NEW YORK

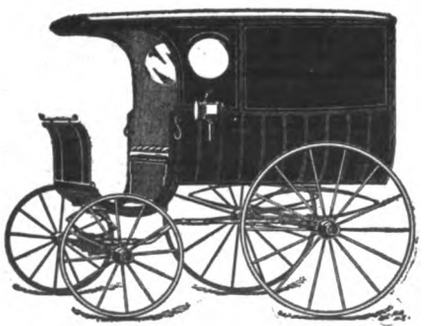
No. 115.—Delivery Wagon.



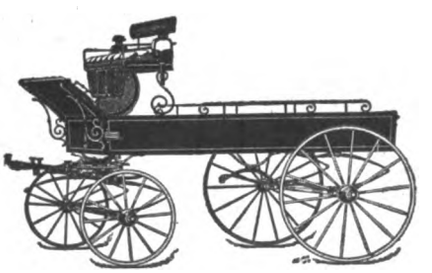
No. 116.—Milk Wagon.



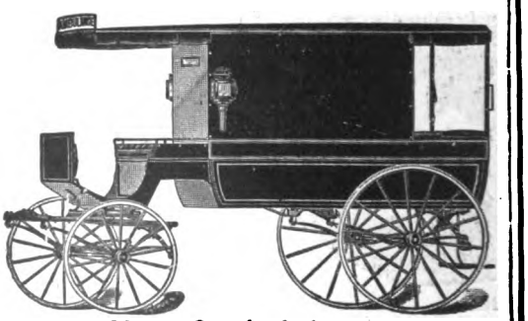
No. 117.—Merchandise Truck.



No. 114.—Delivery Wagon.



No. 124.—Delivery Wagon.



No. 118.—Ambulance.

Digitized by Google

WM. WIESE
With Hardt, Von Bernuth & Co.
Since 1883.

WM. WIESE & CO.

ALBERT MAERTENS
With Hardt, Von Bernuth & Co.
Since 1894.

Formerly Carriage Goods Department of HARDT, VON BERNUTH & CO.

Carriage and Automobile Linings and Livery Cloths

Sole Agents in the United States for
WULFING'S CARRIAGE CLOTH AND EL DE BARAN GOATSKIN

66-68 Greene St., New York

GET a sample of MERITAS Enameled Oil Cloth—crinkle it—see how pliable it is—test it any way you want to. It's not only crack proof, but it's the best wearing material you can put on a carriage top.

Every yard guaranteed by our trademark on the back.

See your jobber.

Standard Oil Cloth Co.
320 Broadway New York

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway Station, 53d St. Elevated and all Surface Lines.

Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIRE-PROOF

STRICTLY FIRST-CLASS

RATES REASONABLE

All Hardwood Floors and Oriental Rugs.

Ten Minutes Walk to Twenty Theatres.

Transient Rates, **$2.50** with Bath, and up.

Excellent Restaurant. Prices Moderate.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*
R. J. BINGHAM, *Formerly with Hotel Woodward.*

Our Carriage or Spring Edge Cushion Frame

Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

The MEYER THREADS and SPOOL SILKS

Made Expressly for

CARRIAGE and AUTOMOBILE WORK.

All Sizes and Colors Always in Stock.

THE BEST IS NONE TOO GOOD.

Dont Take Any Fake Threads.

JOHN C. MEYER & CO., Mills at Lowell, Mass.

Offices: 621 Broadway, New York, N. Y.
77 Summer St., Boston, Mass.
Address all correspondence to our mills, Lowell, Mass.

CARRIAGE STRAPS

All kinds of strap work for carriage builders. Our capacity for work of this kind is practically unlimited. For quality and price we beat the world. Send sample and let us quote prices. -:- -:-

J. C. DECKER - - - - Montgomery Penna.

Digitized by Google

THE BRADLEY SHAFT COUPLING

OPEN

Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

C. C. BRADLEY & SON, Syracuse, N. Y.

CLOSED

Carriage Mechanics

Desiring to improve their present Condition should attend the

TECHNICAL SCHOOL

FOR

Carriage Draftsmen and Mechanics

SUPPORTED BY THE

Carriage Builders' National Ass'n.

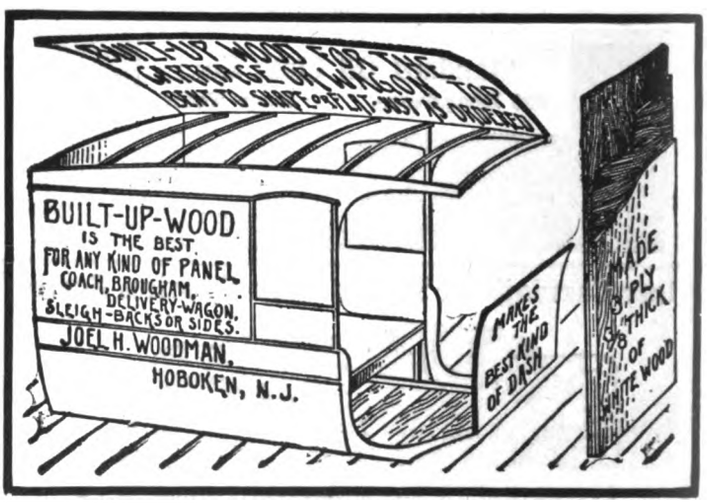
The object of the School is to teach men to design vehicles and make working drawings, and to otherwise facilitate their work in the shop. Only those men employed in carriage or automobile building or their accessory trades are admitted to its privileges.

The classes are conducted in three divisions, viz.: Corresponding, Day, and Evening. The former is open during the entire year, while the day and evening classes are in session only from October 1st to April 1st.

The tuition is moderate.

For prospectus and full particulars, write to the instructor,

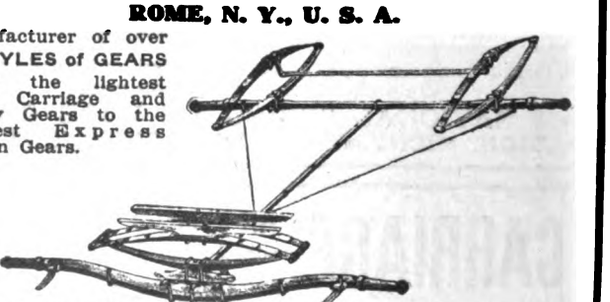
ANDREW F. JOHNSON,
18 West Forty-fourth St.,
NEW YORK CITY.



FITCH GEAR COMPANY

ROME, N. Y., U. S. A.

Manufacturer of over 40 STYLES of GEARS From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.



The Double Elliptic 3-Spring Gear is the most practical combination business and pleasure gear on the market, and is equipped with Wrought or our Common Sense Short Turn Fifth Wheel. Send for our No. 24 Catalogue.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

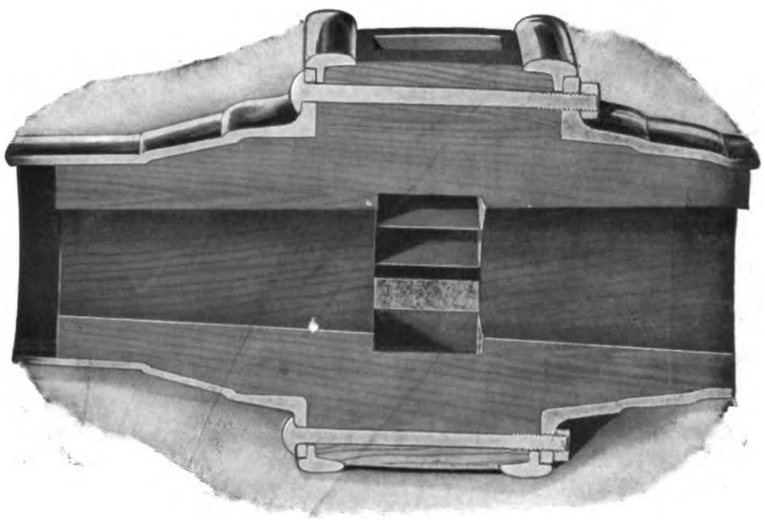
F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

C. T. RAYNOLDS & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

The American Wood Block Co., Delphos, O.



SECTIONAL VIEW.

Hub Blocks

Green—Air and Kiln Dried. Sold by grade or timber run. Compressed blocks or otherwise. 3 in. to 12 in. diameter. Stock kept up to standard quality and ready for shipment at all times.

GILLETTE'S

"IDEAL" HUB

It stands the Racket

The **IDEAL** hub makes the strongest wheel. Repairs are less than on any other style; actual use has proven these facts.

IDEAL is metal protected, wood to wood center, means elasticity; simplicity of construction, easily and quickly repaired, driven spokes best of all, no metal to corrode.

IDEAL has the patented inverted flange that prevents lateral strain.

IDEAL means less tire resetting.

Try it—it is guaranteed.

We want the wheel makers to use the **IDEAL** in their wheels.

The American Wood Block Co.

DELPHOS, OHIO

HUB BLOCKS **HUBS** **DIMENSION STOCK**

Time Has Told the Story!

Service and satisfaction always follow our rolling stock

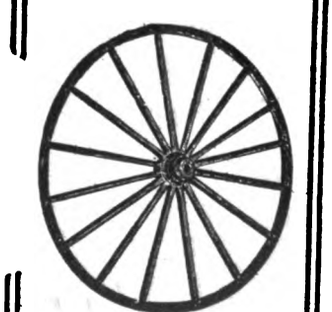
WHEELS

ALL KINDS—BEST QUALITY

Also RIMS and SPOKES

The Eberly & Orris Mfg. Co.

MECHANICSBURG, PA.



Digitized by Google

No. 263.

A LIGHT VEHICLE

TO SELL WELL

MUST BE FITTED WITH AN ATTRACTIVE DASH.

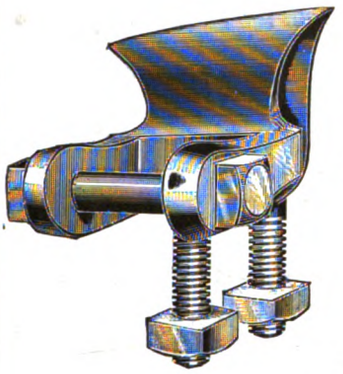
Our No. 263 will please buyers.

A TOP RAIL WILL ADD TO VALUE

OF ALL DASHES.

McKINNON DASH CO.

Cincinnati. Ohio. Troy, Ohio. **Buffalo, New York.** St. Catharines, Ontario.



Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips 5/8 or 3/4 width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

Catalogue "H" and Prices on Application.

COLUMBUS BOLT WORKS, Columbus, O.

USE KOKOMO TIRES

AND YOU WILL BE

SATISFIED.

WE MAKE BOTH

SOLID and CUSHION.

Kokomo Rubber Company,
KOKOMO, INDIANA.

Digitized by Google

The Hub

C·B·N·A·
WASHINGTON

TRADE NEWS PUBLISHING CO.
24-26 MURRAY STREET, NEW YORK

Vol. LI. No. 7

Digitized by Google

OCTOBER, 1909

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

RIGHT VARNISH MAKES

Satisfactory Vehicles

CARRIAGES. buggies and other vehicles that satisfy must not only be well made, they must also be **well varnished.** Your reputation and your profits depend upon the varnish you use. You can make no mistake by using STANDARD VARNISH WORKS' VARNISHES, they are the standard of excellence because they represent a **Unity of Color, Lustre, Working, Drying and Wearing Properties.** Of those not using these varnishes we ask for an opportunity to prove the validity of our claims.

STANDARD VARNISH WORKS

CHICAGO NEW YORK LONDON BERLIN BRUSSELS

INTERNATIONAL VARNISH COMPANY, Ltd., TORONTO, CANADA

CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

ESTABLISHED IN 1791

Wm. Harland & Son

Beg to announce that they have removed their United States Headquarters to Genesee Street and Erie Canal, Buffalo, N. Y.

Wm. Harland & Son

IMPORTERS OF

Harland's English Varnishes

FOR

Coach and Automobile Builders, Railway and Street Car Finishing

AND MANUFACTURERS OF

High Grade Varnishes for all Purposes

FACTORIES:

MERTON, LONDON, S. W., ENGLAND.

GENESEE STREET and ERIE CANAL, BUFFALO, N. Y.

400 EASTERN AVENUE, TORONTO, ONTARIO.

Western Branch, 40 Dearborn Street, Chicago. C. H. Schooley, Manager.

General Manager United States and Canada, H. Hagger.

Digitized by Google

Valentine's Vanadium Varnishes

Valentine's Vanadium Varnishes have been developed for the exacting needs of the Automobile--its manufacter and its user. The same qualities make them equally desirable for Coach and Carriage work.

Valentine's Vanadium Varnishes are full-bodied and free-working, rapid and perfect flowing, rapid and hard drying. They resist the action of mud, grease, oils, etc., to a remarkable degree.

Valentine's Vanadium Varnishes are unexcelled in brilliancy and durability and they WEAR BRIGHT. The Pale Vanadinm Varnishes are the palest high grade varnishes made.

Over 80 per cent of all exhibitors at the automobile shows of the last four years finished with VALENTINE'S VARNISHES

VALENTINE & COMPANY

NEW YORK, CHICAGO, BOSTON, TORONTO, LONDON, AMSTERDAM, PARIS.

82 Years' Experience in Every Can

E.S. 1827 &CO. **Edward Smith & Co.**

CARRIAGE VARNISHES

Everything from the
Bare Wood to the Finishing Coat.

CHICAGO **NEW YORK**

HOTEL EARLINGTON

55 WEST 27TH STREET
Near Broadway, NEW YORK

This well known, absolutely fireproof hotel, after being entirely renovated, redecorated and fitted up complete with new plumbing has now reopened.

Rates from $1.00 and Up
With Bath, $5.00 and Up

Special rates by the season or year for permanent guests. A special feature will be the cuisine, both in the dining room and in the new cafe for ladies and gentlemen. A la Carte and Table d'Hote.

Hotel under the management of

GUERNSEY E. WEBB
Formerly of the Ansonia.

RUB —— RUB —— RUB

THAT'S THE EXPERIENCE SOME PAINTERS HAVE WITH A POOR RUBBING VARNISH. THEY RUB TILL THEIR HEART ACHES ONLY TO HAVE THE VARNISH SWEAT, OR ROLL UP UNDER THE PAD.

XX Diamond Rubbing and Hard and Quick Drying Rubbing "A"

DRY HARD TO RUB IN TWO DAYS, WITHOUT SWEATING, ARE TOUGH AND THE BEST FOUNDATION FOR FINISHING COATS.

MADE BY **MOLLER & SCHUMANN CO.**

MARCY AND FLUSHING AVES., **BROOKLYN, N. Y.**

Please mention "The Hub" when you write.

Digitized by Google

F. O. PIERCE COMPANY
NEW YORK, U. S. A.

Manufacturers of High Class Pigment Colors from ORIGINAL FORMULAE. Colors ground in Japan and other MEDIUMS to meet any SYSTEM of APPLICATION : : : :

AUTOMOBILE PAINTING

Our Automobile Color Book just issued showing latest shades for this class of work mailed upon application.

DURABLE **RELIABLE**

Mander's English Varnishes

MANDER BRO'S, Wolverhampton, Eng.

Works Established 1803

A. E. LOUDERBACK

Agent

118 Hudson St. New York.

CARPENTER-MORTON COMPANY

Sole Agents for New England

BOSTON MASSACHUSETTS

BRILLIANT **ECONOMICAL**

Digitized by Google

JOHN W. MA

Manufacturers of

PAINTS

ORIGINATORS OF

Automobile Coach Car and Wagon Colors

For fifty years Masury's Colors have been the STANDARD OF PAINT EXCELLENCE

NEW YORK **CHICAGO**

Digitized by Google

SURY & SON

Paints and Varnishes

VARNISHES

Half a century of Color Making demonstrates to us the quality a varnish should possess to preserve and beautify color. For thirty years we have manufactured FINE CARRIAGE VARNISHES and know their superior qualities. Our AUTO VARNISHES are extremely pale in color, dry hard, presenting a tough surface that resists the elements and the action of dust, grease and oil to the greatest possible degree.

"MASURY'S" VARNISHES OVER "MASURY'S" COLORS INSURE THE BEST RESULTS

MINNEAPOLIS **ST. LOUIS**

Digitized by Google

WHY ARE THE WILLEY SPECIALTIES

used in all the principal carriage building factories, the majority of the custom and repair shops, and the motor vehicle shops generally ?

Because of their Triple Standard:

QUALITY ECONOMY UTILITY

SPECIALTIES

that have **displaced** the "out-of-date" lead and oil method:

ECLIPSE PRIMING OIL,
PREPARED FILLER FOR GEARS,
SMOOTHING-UP COAT,
PREPARATION OR SURFACE COAT,
GROUND COLORS FOR SEMI-TRANSPARENT GLOSS COLORS,
"ELASTICGLOSS" COLORS,

because of their **usefulness** to the painter and **economy** to the consumer.

LEADERS--not followers.

We demonstrate the advanced and up-to-date method of

SURFACING METAL.

We accomplish richer and more beantiful color effects wito our **"ELASTICGLOSS" COLORS,** and deepen and enrich these with our specially mixed **Glaze Coats.**

C. A. WILLEY COMPANY

MANUFACTURE EXCLUSIVELY

Specialties in Carriage, Automobile and Passenger Car Paints, Colors and High Grade Varnishes

Hunter's Point, New York City, N. Y., U. S. A.

Digitized by Google

The Hub

Copyright, 1909, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. LI. OCTOBER, 1909. No. 7.

THE TRADE NEWS PUBLISHING CO. OF N. Y.

Publishers of THE HUB

J. H. WRIGHT, *President.* G. A. TANNER, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

JACOB H. KLEIN, *Technical Editor.*

REPRESENTATIVES:

J. HENRY KLUNE. J. G. TANNER.

Other Publications of Trade News Publishing Co.:

HARNESS (monthly) .....per year, $1.00

AMERICAN HARNESS AND SADDLERY DIRECTORY (annual) .....per copy, $4.00

THE HUB is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 10 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of TRADE NEWS PUBLISHING CO.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 25th of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

FRANCE.—L. Dupont, publisher of *Le Guide due Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

GERMANY.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

ENGLAND.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

At The Nation's Capital.

It is twenty-two years since the C. B. N. A. held a meeting at Washington. From a truly business point of view it presents few allurements. Washington is not a manufacturing city. Its instincts are political. Every American feels it a sort of duty to at some time or other "see Washington," and when it was selected it met with cordial endorsement. It is nearer and more convenient to Northern centers and for the bulk of Southern builders than any other city where conventions have been held than perhaps Cincinnati. It should attract a good many Southern builders.

The date suits most people—October 19, 20, 21. The Arlington Hotel, Vermont and H Streets, is central, and the immediate surroundings are attractive. The accommodations for the reception functions on Tuesday evening are excellent. The new Willard Hotel is royal in its appointments and its location. Pennsylvania Avenue and Fourteenth Street is one of the most attractive corners in all Washington. There is no dearth of opportunities for sightseeing. The female contingent will naturally be larger than if it were any other place. Women folk who have never been in Washington have been waiting for the time to come when they can see with their own eyes the places and things and sights they have been reading about all these years.

Taft is not there, but the White House is, and the blue room is as large as ever. The association instead of weakening is taking on new life. The work of the committee on membership ought to be manifest in a larger roll and larger attendance. A glad week it will be to all, and it will be long remembered for the sights that will be seen and the places visited and the impressions made.

The Thirty Seventh.

As the years roll on the annual gatherings of the C. B. N. A. become more and more interesting. Some builders say it is more sentiment than business considerations that holds this organization together. A few point to the possibilities of its influence waning and to the significance of the rise of another organization of much similarity in name which was brought into existence by pressure of trade necessities. Still others think and say that the departure from custom building to wholesale factory work, the immense output of which supplants the little output of old-time factories. limits the field for the old-time national organizations. Some also point out that there is not the same attendance of the heads of large wholesale builders as there was years ago.

Be all this as it may, the fact remains that there has been no reduction in the number of plates at the banquet table. In fact, the secretary has to look around for an exhibition hall large enough to accommodate all who are entitled to attend, and a banquet room large enough to accommodate an average of six hundred diners.

More Expositions.

The exposition habit is growing in European countries. No less than half a dozen are projected; so far as our immediate industry is concerned they do not attract very much of the show spirit. Our consular reports, however, give some evidence of a greater use of American vehicles in some localities, and builders are advised to take steps to make their work better known. Such opportunities as exist for foreign trade are to be more frequently found in colonial lands, or in the regions where agriculture engages attention. In the old European cities habits are fixed and certain continental makes are bought and used as a matter of course. Carriage taste abroad is not so much a matter of taste as of habit or custom. The idea of buying vehicles that might be shipped "knocked down" and put up in the foreign market is not in accordance with foreign taste. Nor is there such an appreciation of our lightness of make and features of construction.

Yet there is something to gain by showing American carriage styles in coming European exhibitions, notably that of 1910 at Berlin. The warmest kind of invitations have been extended to American manufacturers. The best of London and Paris will be seen in carriage work, and to Berlin will come people from many lands who will carry away whatever impressions they receive.

Digitized by Google

More Direct Supervision Needed.

If there were some way of turning out good carriage mechanics, or even good apprentices, as there is of turning out good draftsmen, one source of anxiety of carriage builders would be removed. When English carriage builders get tired discussing everything else they turn to the apprentice question. There are lots of reasons why good mechanics are scarce too familiar to call for repetition. There is one cause not often spoken of, viz., that too little care is taken with the young shop mechanics to impart instruction in a methodical way. The foreman has no time and is not paid to teach or tell. The workmen don't care or don't know how to teach. So the young mechanic plods and stumbles along, and does what he is set at the best he can, and manages in time to pick up enough practical knowledge to become a "skilled" mechanic. Of course the use of machinery lessens the chances of stumbling. If the boy "tends" the machine he does his duty. There are certain lines, such as painting and trimming which must be learned straight. But after all, and speaking with a wide latitude, there is a lack of methodic supervision and direction of the young men who find their way into the carriage and wagon factories.

Conscientious Use And Care

Notwithstanding all the progress that has been made in the care of vehicles by owners carriage manufacturers occasionally point out that more or less complaint arises from lack of proper care when the bottom facts are arrived at. Proper use or carelessness is really at the bottom of much enforced or obligated repair work. Dealers in vehicles are often too ready to put the blame of alleged defective work on the manufacturer. He has a customer to please and the manufacturer is not in a postiion to prove his suspicions or even evidence of improper use.

The carriage guaranty has become an "institution." Each builder has his own, and they all read about alike, despite the fact that very many years ago the C. B. N. A. formulated an official guaranty. The stronger the guaranty, the more advantage is taken of it usually. The guaranty is often a premium on carelessness and an invitation to make dishonest representations when tom-fool carelessness or awkwardness causes damage. Carriage builders are imposed upon, and they take the imposition with Christian forbearance. A conscientious use and care of vehicles, if such a millenial possibility can ever be achieved in this commercial age, will do much to lessen claims for defective parts.

Straining Toward The Ideal.

Recent minor modifications in carriage construction would seem to suggest that the opportunities for original conceptions in styles are being exhausted, although minor automobile effects are still observable in some details. All the possible varieties of suspension have been explored. While the science of springs is not understood, the value of the rule of thumb methods of trying has brought the use of springs to practical completion. The gear manufacturers have naught to do but to apply present experience to new requirements as they arise. The painter and varnisher is forever studying how to get better results and how to secure the most favorable shop conditions so that the evanescent virtues of the paint pot can be securely fastened into the woodwork with the best and most permanent effect. It is deeply ingrained in the mental make-up of the carriage builder each day and year to do something better or more pleasing than he did yesterday or last year. No other trade is built upon such a spirit of unrest and dissatisfaction with achievements. The designer is an iconoclast so far as he has no respect for the past. He seeks to make his past achievements of no avail by creating new effects to please the eye and taste. This is an ideal toward which the draftsman is struggling and he will never cease to push toward it.

See Your Trade.

Builders of carriages are not in the habit of relying too much on the "follow up" method of getting business so common in some lines. Their annual catalogue is an annual reminder of their existence and shows what modifications in construction, if any, are made. The established custom of sending salesmen to dealers as a soliciting proposition cannot be improved upon. The occasional visit of dealers to factories brings dealers and builders into close touch, and yet occasional departures from stereotyped methods of doing business is also productive of good results as the personal visit of a member of the firm not bent on getting orders and the sending out of an occasional letter of the follow-up order calling special attention to a line or two.

The usual follow-up methods soon wear out. They simply ding-dong. They lose the power of direct and personal appeal. They are responsible often for declining trade. They furnish excuses to business men in certain lines who imagine thereby that they are enterprising and progressive. Often it is retrogression. Nothing can take the place of originality, personal push and seeing the people whose trade is sought.

Concentrated Effort.

The sentimental and mere academic features of good roads have passed, and we are now in the economic and practical phase where the main point is how to build and what material to build with. Back of this, however, lies the financial problem. This solution comes slowly because there are no big jobs or rake-offs in it as in other lines of public utilities where the politicians can figure out big shares for themselves. But withal, the force of public opinion and the willingness to be taxed are helping out nicely.

The chief purpose of national organizations, however, will for some time continue in the arousing of public interest in education, in gathering information and in organizing the agencies which have to do with the carrying out of the great work. The last meeting indicated that this is the line to be pursued.

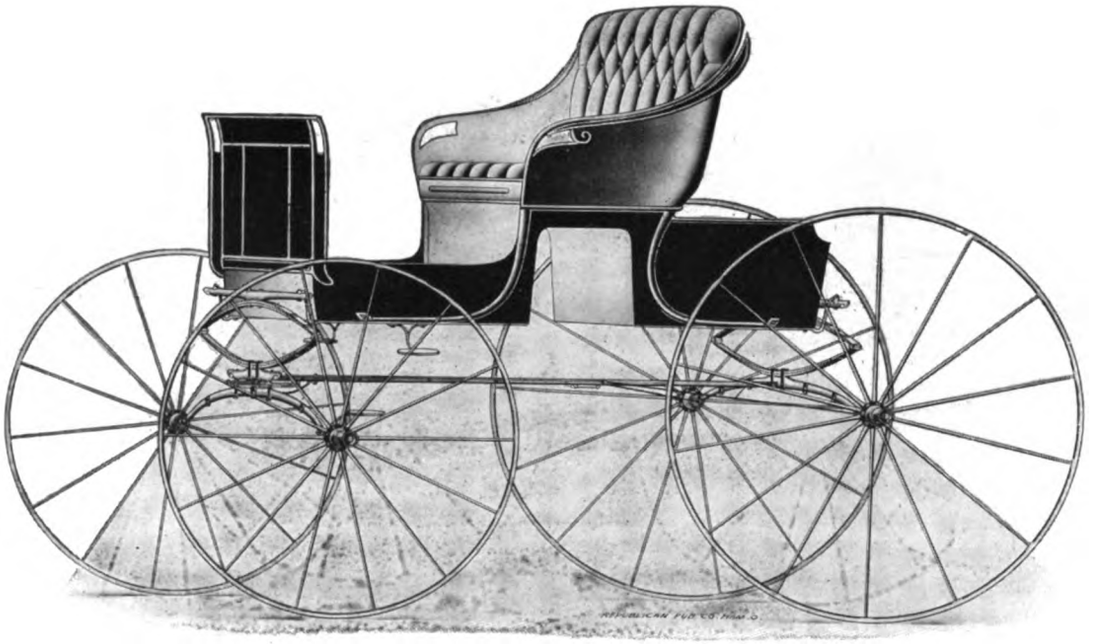
Automobile building has very suddenly become a matter of assembling of parts. It took the carriage industry a very long time to reach that point of development. The manufacture of parts has made it an easy matter for carriage builders to enter the new industry. Many accessory manufacturers have plunged into the construction of accessories and have helped to place auto building on a firm basis where cost of construction is reduced to a matter of addition and allowances.

A law has been enacted in France which declares that after five years the use of white lead or paint composed of linseed oil and white lead and of special compounds containing white lead in any form shall be prohibited for every description of painting work. The passage of this law has been stubbornly contested by manufacturers of white lead during the five years it has been under consideration. Its final passage is due, it is said, to the ravages among all classes of workers connected with a substitute. This is rather drastic regulation considering the importance and convenience of white lead in so many industrial channels.

Digitized by Google

Illustrated Carriage Section, October, 1909.

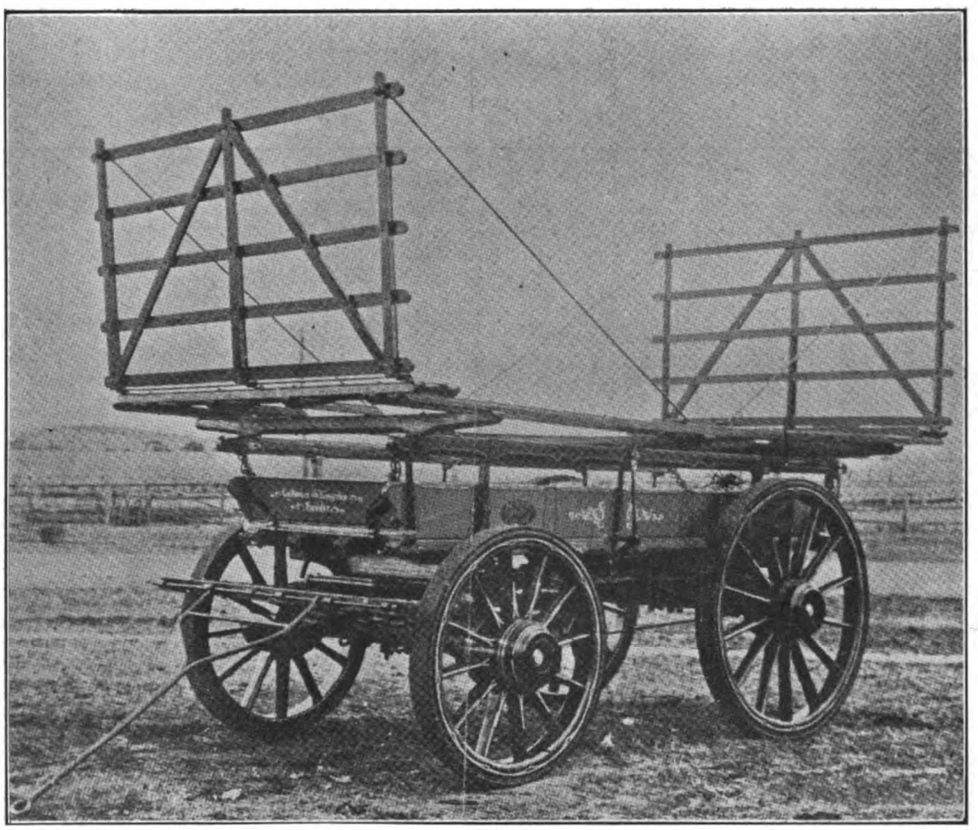
GENERAL MERCHANDISE TRUCK.



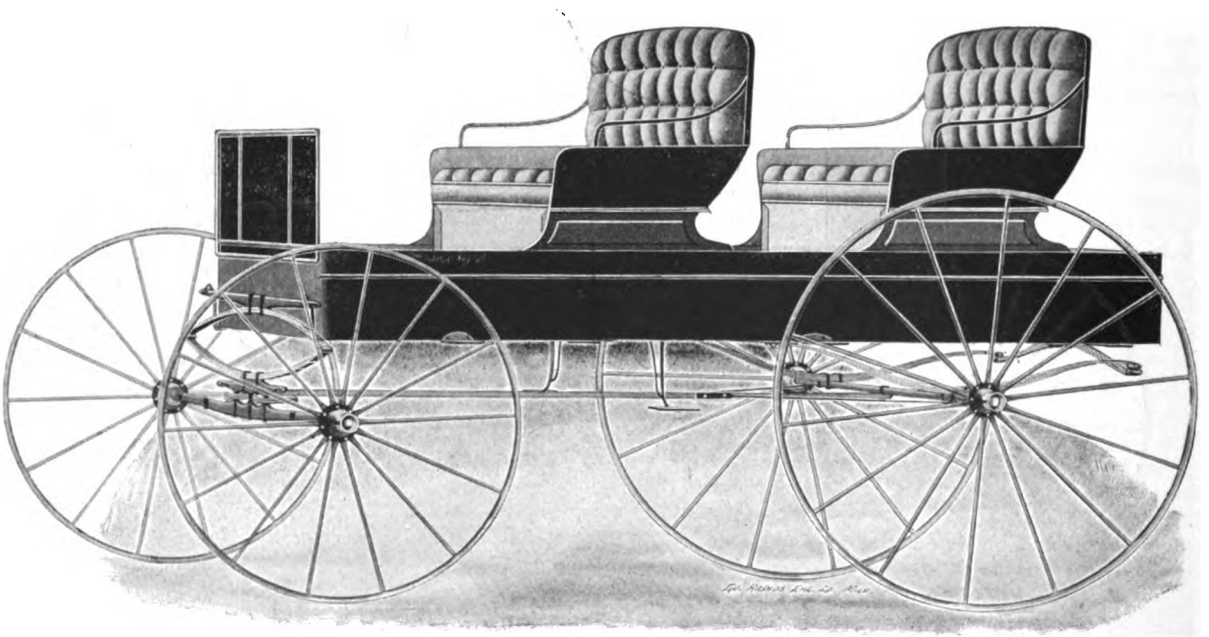
OPEN STANHOPE.

Built by Staver Carriage Co., Chicago, Ill.

Digitized by Google



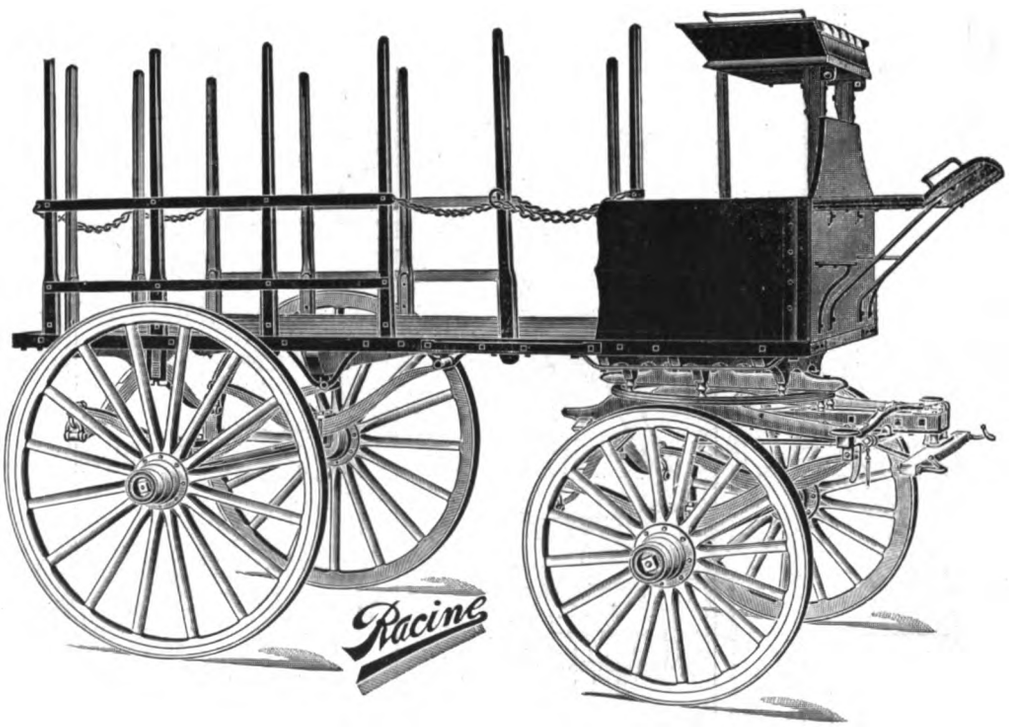
AUSTRALIAN GENERAL PURPOSE FARM WAGON.



HALF PLATFORM SPRING WAGON.
Built by D. M. Sechler Carriage Co., Moline, Ill.

Digitized by Google

SINGLE HORSE FARM WAGON.
Built by Mitchell & Lewis Co., Racine, Wis.



RACINE STAKE TRUCK.
Built by Racine-Sattley Co., Racine, Wis.

Digitized by Google

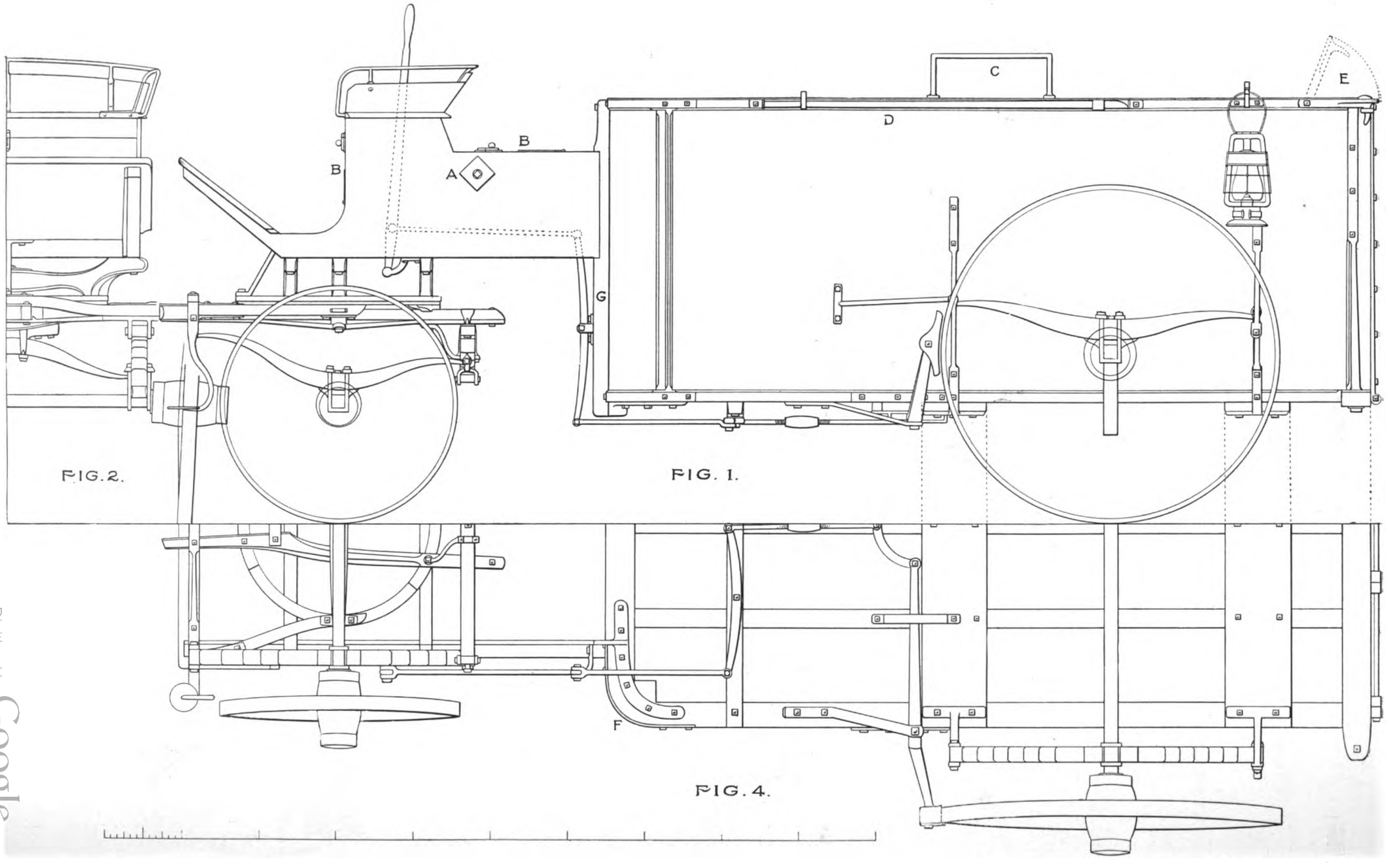


FIG. 2.

FIG. 1.

FIG. 4.

Scale ⅝ inch to the foot.

WORKING DRAFT OF NEW YORK HORSE **AMBULANCE.**

Described on opposite page.

Digitized by Google

Wood-working and Smithing

DESCRIPTION OF WORKING DRAFT OF NEW YORK HORSE AMBULANCE.

(Drawings on opposite page.)

Extensive users of horses find it necessary to possess an ambulance for their own exclusive use, to be utilized in the transportation of ill or disabled equine from the city stable to country pastures to convalesce, or to convey them from place of possible accident to the stable for treatment by veterinary.

The style here shown is typical of this variety of vehicle and is manufactured by the Sebastian Wagon Co., of New York, the pioneer builder of such wagons.

This job, which is used by a large brewery firm, is provided

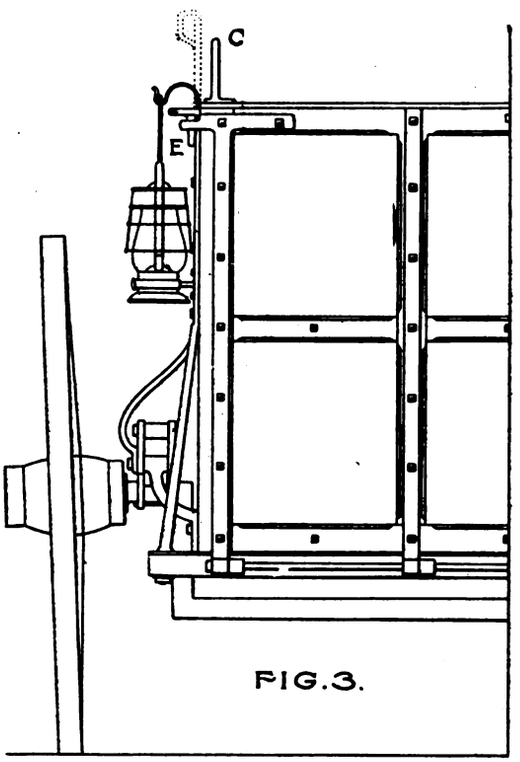


FIG.3.

with a windlass, located underneath the driver's seat and bolted to the framework of boot, the rope passing through the latter into the main body, when required. The spindle for the crank of windlass is shown at side of boot at point A. Access to the windlass is obtained through a 12-inch lid in top of neck of boot and a 10-inch lid in front at heelboard as at BB in side elevation, Fig. 1.

Rail C, Figs. 1 and 3, placed at each side of body is made of ¾-inch round iron and is 18 inches long and 6½ inches high. It is used to support a horse too weak to stand, and the result is accomplished by means of a broad band passed around rail and under horse's belly. The job is also equipped with a brake, which is operated by hand and constructed according to the method shown in side elevation (Fig. 1) and plan (Fig. 4).

In the complete equipment must also be included a crowbar which is fitted to the side of top rail of body at D in side elevation and a lantern, the latter being at each side. These furnishings are not often used, but must be carried to meet any emergency.

The tailgate is large and heavily constructed, being utilized by the horse as a gangplank in entering the body of wagon. The side uprights of tailgate, as shown in the rear elevation, Fig. 3, are 3½ inches wide by 2 inches thick. Center uprights are 3 inches wide by 1¼ inches thick, center crossbar is 2½ inches wide by 1¼ inches thick, top and bottom bars are 2¾ inches by 2 inches. To the inside of gate are screwed several 2-inch by 1-inch cleats, which provide a grip for horse in ascending. The means of securing gate when closed is shown at EE in side and rear views.

The top rail of body is 2¾ inches wide by 1¾ inches thick; side sills are 3¾ inches wide by 1⅞ inches thick, with three additional sills in between. Tailbar is 4½ inches wide by 2¼ inches thick, without plate. Front corner of body is rounded as at F, and is worked out of a heavy piece of timber. It provides a surface upon which the painter does some artistic scrolling.

Boot is stiffened and strengthened by a 2½-inch by ¾-inch rocker plate, which extends from the toe of bracket along the inside of rocker and upright G in side elevation to the underside of body, branching off as shown at F in plan.

Dimensions of body proper on inside are: Length, 9 feet 6 inches; width, 4 feet 10 inches; depth, 3 feet 9 inches, and is lined with sheet iron. Boot is 41½ inches wide outside. Entire length of body is 15 feet 6 inches.

Dimensions of gear are as follows: Front wheels, 37 inches diameter, including tires; hubs, 12 inches long and 7 inches diameter; spokes, 2¼ inches; felloes, 2½ inches deep. Rear wheels, 53 inches diameter, including tires; hubs 8 inches diameter by 12 inches long; spokes, 2½ inches; felloes, 2¾ inches deep. Tires, 2¼ inches by ¾ inch. Axles, 2 inches and 2⅛ inches. Track, 4 feet 10 inches and 7 feet 7 inches outside. Fifth-wheel roller bearing, 32 inches diameter. Springs: front side, 42 inches from center to center, cross, 44 inches, seven 2½-inch plates in both; rear springs, 47 inches long from center to center, with twelve plates 2½ inches wide.

By referring to the side and rear views of draft the peculiar method of hanging rear of body will be observed. All ironwork, such as stays, hinges, etc., are rather heavy.

These vehicles are sometimes furnished with a canopy top which is made to raise or lower, or to remove entirely. The body and gear are usually painted either English vermillion or coach painter's red and elaborately ornamented.

PRACTICAL LINEAR LESSONS IN CARRIAGE DRAWING.

It is most essential that those who are destined to take the most prominent parts in practical carriage building should fortify themselves with its theory of design as the handmaiden to practice. This applies to drawing as well as to the chemistry of painting and smithing, or to the mechanics and geometry of construction.

As we face the footlights of carriage and motor carriage exhibitions, the eye of the cultured draftsman becomes vested in points of distinctive design, or in the bold origination of some particular style of carriage.

In reading criticisms of carriage displays at exhibitions, or of drawings in competitions, it is easy to decide that many of those critics only speak from a very limited standpoint, and mostly from that of impression, rather than from the sure foundation of knowing what constitutes correct design and true mechanism and construction.

The value of reviews lie in their clear candor in pointing out the strong weaknesses in the design and build of the carriages reviewed in the language and strength of a practical coachmaker who has wormed into his talent what constitutes true

Digitized by Google

design, and able to point out why. Then the critic speaks with authority and power, while the reader breathes an inspiration from the defects and excellences pointed out.

But while these things may be subsequently enlarged upon, the immediate matter before us is practical carriage drawing. It is somewhat strange that practical carriage drawing as a technical subject has not been written on more extensively, and with greater firmness than it has.

Too much stress cannot be laid upon the desirousness of those imbued with the importance of the subject to give it first thought in the technology of carriage designing. Because designing is the governing branch in the whole range of carriage

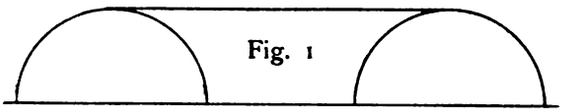


Fig. 1

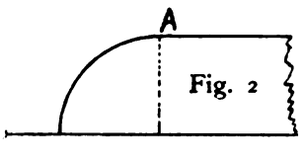


Fig. 2

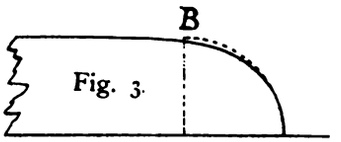


Fig. 3

manufacture, and the most essential in educating the faculties to an artistic grasp of its necessities, while the mechanical side of the work is made much clearer with accurately made working drawings, though it must not be lost sight of that a workman may be good at reading and making a working drawing, but entirely at sea in the matter of designing, for the one leads and the other follows.

The organizer arranges lines of order, but the designer defines and the workmen follow. It is the destiny of society and its one seam of strength "that those who think must ever govern those who toil," and so in carriage manufacture of strong progress, a designer must lead in the front rank of the industry, and the workmen follow his dictates to completion.

In guiding the young draftsman it should be always kept before him that there are laws that govern art that are as imperative in their behests as those indicted to Moses at Sinai for the guidance of mankind. And as nature punishes in proportion to the wrongs inflicted on her, so does man's handiwork offend the senses when not produced in harmony with her dictates, because truth is always tuneful and error discordant.

The laws of art, as set forth by Ruskin in his "Elements of Drawing," are (1) the law of principality, which gives unity by making out of many things one uniform whole, and thus in composition to secure unity, and that one feature shall be more important than all the rest.

Therefore, in designing a carriage the one controlling feature is the outline of the body, around which the other parts are merely accessory ornamentation as well as of mechanical necessity, and this is the law of principality.

The second law is that of repetition, which expresses unity through sympathy among the surrounding units of the whole. We, therefore, gather that in designing accessories they must be balanced in equal opposition, but not that they may become discordant to the senses in their disproportion, but as a mass balance themselves to the principal.

The third law is that of continuity. In art the law of continuity refers to the harmonious succession of a number of objects as they recede from the eye. The law of continuity may be applied to carriage design in the blending of harmonious curves continued from the body to the underworks, and in this way produce balance to the whole.

The fourth law is the law of curvature. To the carriage designer a knowledge of the law of curvature is of the highest importance and practical value.

Nature in all her animated and physical works portrays her handiwork in curves in many forms of expressions. We are led to admire a beautiful horse from the symmetrical curvature of its body. Its noble mien and graceful action are also points of attraction. Thus the whole converges to the principal of the animal's form.

A landscape is beautified by its undulations as well as by its varigated flora, its grassic carpetings and the density of its woodlands.

The rugged grandeur of a mountain is enhanced by the beauty of its curvature as it vanishes to the plane beneath. In studying these laws of nature we discover their use in practical carriage manufacture. Because, in designing a carriage of pronounced and flowing lines the law of curvature comes strongly into requisition in preserving the elevation outline in the symmetry of curves of degree, which the linear picture of a body's outline may express.

Hence, a knowledge of the technicalities of carriage design is of vital importance to a draftsman, for without this culture and art knowledge, all his efforts will be marred with educational defects, which will show themselves up in disproportioned surfaces and in abrupt blendings in his outline drawings.

On a carriage being placed in a show room for sale, how often does a salesman have a customer or caller make the remark that the carriage he or she may have looked at is very nice, but that there is something wanting to fill the bill of their taste. something that they cannot explain, but which they feel the carriage does not possess, and while it answers their needs in every other particular, yet from an art standpoint the vehicle is a failure, and so embargoes itself as an asset of manufacture.

The traits of customers assert themselves in various ways, but that of being possessed of a carriage of rich design stands aloof from all the others. It is, therefore, of vital importance in the interests of successful manufacture that a carriage should be molded in all the wealth of technical art to make it appeal to the inate senses of buyers, and thus impress its qualities upon them more forcibly, than by the persuasive eloquence of a salesman, however talented he may be.

Because it is born of the fact that if a carriage is pedigreed with the elements that embody in its completion—the laws of principality, repetition, continuity and curvature—it will be

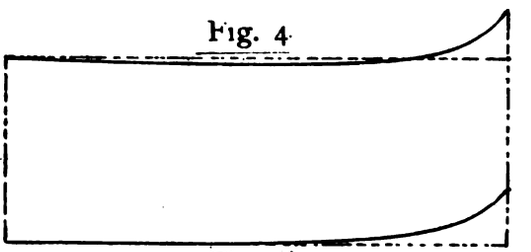


Fig. 4

Fig. 5

balanced in all the force that goes to make a perfect product.

The diagram drawings illustrating this article will explain what constitutes good and defective lines.

In the diagram, Fig. 1, is shown two half sections of a circle connected on the top curves by a straight line. The immediate object of this is to explain a circle, or part of a circle, and a straight line are arbitrary lines, and, therefore, negatives to harmony. The effect of the connection of the curves with a straight line as in Fig. 1 is to give the appearance to the line of being slightly hollow. In practice at the bench it is the correct thing to make the line slightly rounding so as to kill the illusion of being hollow, and, therefore, to appear to the eye as straight. Fig. 2 shows this illusion more prominently at point A where the straight line and the curve section are connected, while Fig. 3 shows the curve section and the straight line in harmony through the curve being slightly lowered from the arbitrary point and eased into the back line. The right procedure is to take the abrupt point of the circle off as at B and slightly round the back line in to harmonize, which will give the correct line as in Fig. 3.

In drawing the belt line of a brougham, tandem or of a limou-

Digitized by Google

sine body it is most necessary to have a knowledge of the blending and harmony of lines as dealt with in the preceding illustrations, because at many points in the design of carriage bodies this knowledge is called into requisition.

In Fig. 4 is shown the belt and elbow line of a brougham and similar body. In drawing this line the teaching expressed in Figs. 1, 2 and 3 applies forcibly to Fig. 4, because it will be so often noticeable in the amateurish and charlatanic work of

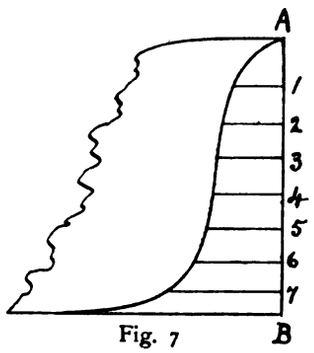


Fig. 7

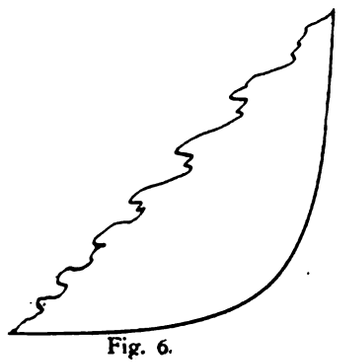


Fig. 6.

would-be mentors, that they are entirely ignorant of any scientific guidance which their forcible-feeble work shows itself in many of the trade journals of the carriage building industry.

The chain line in Fig. 4 is the straight line, while the elbow line is drawn in full and shows the slight rounding from the straight necessary to blend evenly into the quick end curve of the elbow.

Fig. 5 shows the elbow with a longer corner curve, which allows it to run into the belt line with a very slight deviation from the straight. These lines may seem of elementary importance, but they are the alphabetic basis of design, and bad lines nowhere catch the eye so quickly as on the belt and elbow line of a body.

Fig. 6 shows the back and controlling line of a deep quartered cab phaeton body. The line shows the powerful effect obtainable by a faint extreme top corner pillar line and a faint bottom side line blended together with a full flowing corner curve in one, but single continuous line from point to point.

Fig. 7 shows a back body double curve. In drawing this line it is quite as important that the contrasting degrees of the curve should fall in a subtle and full harmony as it is for the straight line and the circle section curves in Figs. 1, 2, 3, 4 and 5. But the line in Fig. 7 is more difficult to complete with a cultured and life-giving effect, because to be thoroughly rich it must be clean in its serpentine undulations, and without showing a connection in its tracing. It is in making a line of this varying character where the power of freehand tells, because a draftsman

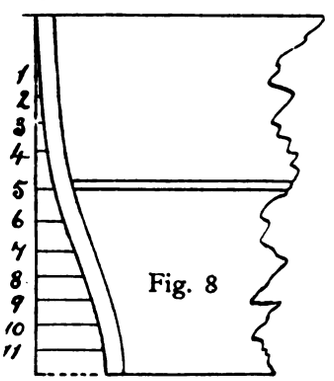


Fig. 8

with a piece of chalk can trace this line with a stroke of his hand if he sets his points of angle off from the square line AB as at 1, 2, 3, 4, 5, 6 and 7. When this is done on the blackboard the line can be firmed in with patterns and should a curve require copying off the method of using the divisions shown in Fig. 7 is a good way of doing it.

In drawing in the side curve of the front pillar of a mail phaeton or victoria body, as in Fig. 8, to a contour position as the turnunder requires. The width of the half cross section of the body across the top of the pillars, and the width over pillars on seat line, and the width of body on bottom, should be marked off, and the contour line drawn in with the hand, connecting these points of width. Then the curve can be firmed in with patterns, while a full pattern can be made off the drawing by using the same principle of divisions as in Fig. 7 through the lines 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 11, and drawing the side line into these points, as in Fig. 8.

In the fashioning of chariot pillars for broughams and motor car bodies, but especially in motor bodies, there are some productions having no character but that of a change without any artistic progressive effect in outline. Fig. A is a style peculiar to some of these and may be classed as of sapling proportions with a pugnacious looking dub end and as a mean characterless pillarette.

Fig. B is also shorn of strength of character by its sameness of proportion, though its base gives an artistic finish to the main

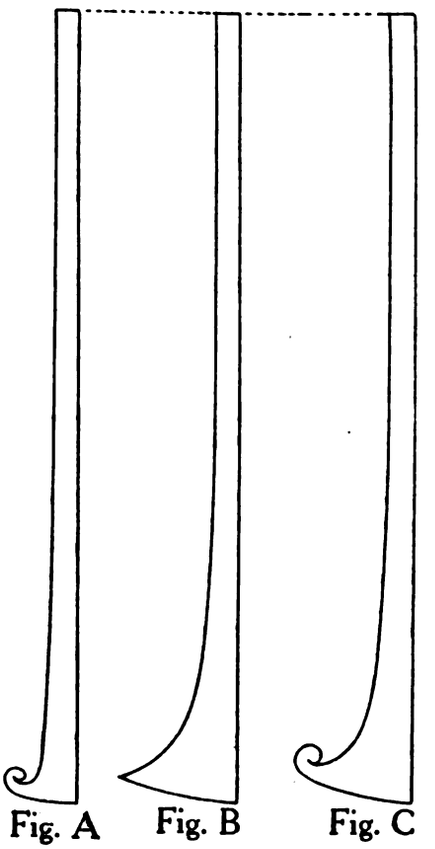


Fig. A Fig. B Fig. C

flow of the controlling body line, which is the functional formation of the chariot pillar from its first inception in coach body design.

Fig. C is another style of pillar in parallel strength, but with a base of curvature more in harmony with the short and quickened curves peculiar to open styles of motor body design. Still, its parallelism robs it of strength of character as a continuous line of finish. The base curves of these illustrations fully show the subtle strength of the law of curvature in blending the outer line of the pillar into the base curve with harmony, and is another phase of the teaching explained in the diagrams, Figs. 1, 2, 3, 4 and 5.

In the old world architecture the Greeks were famous for their detail in the pillar lines of their temples and theaters. Even the steps leading to the doors of these buildings were made to conform to the law of curvature in the fullness of their front line to blend into the end curves. In carriage designing it is not only necessary to understand the theory of linear curvature

Digitized by Google

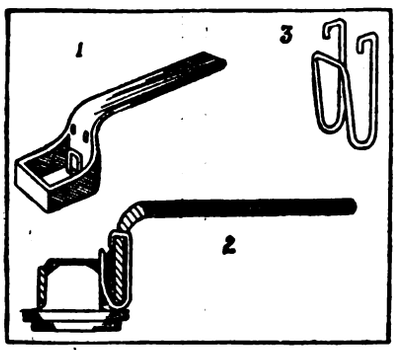
in the relation of arbitrary lines to each other, but also in blending curves of degree into one another.

These illustrations give the fundamental principles of designing in curves, upon which the life-giving elements of carriage design is based. The diagrams are introductory to the fuller subject of practical carriage drawing, which it is purposed to follow up in subsequent papers.

NEW VEHICLE WRENCH.

Pictured in the accompanying engraving is a wrench particularly adapted for unscrewing the nuts of carriage and wagon axles. The wrench differs from the ordinary in that it securely holds the nut in place, permitting of conveniently starting the nut when screwing it on the axle and preventing it from falling and being lost when it is removed from the axle.

The general form of the wrench is similar to the ordinary, consisting of the usual square socket with an extension at one side, which serves as a handle. Fitted in the socket is a spring, the general form of which is indicated in Fig. 3. It will be observed that the spring is bent at its center and then doubled so as to provide a portion which extends into the socket and another



IMPROVED WAGON WRENCH.

portion which passes along the outside. The outer portion terminates in a pair of hooks which pass through openings in the wrench just below the handle and serve to hold the spring firmly in place. When using a wrench of this sort the operator may keep his hands clean, for he does not have to touch the nut. The wrench clings to the nut after it has been removed, and there is no danger of its becoming soiled by falling to the ground. The inventor of this improved vehicle wrench is Carroll J. Atkins, Cando, N. D.

GOOD FOREST WORK ON VANDERBILT ESTATE.

In point of variety and scope the forest work done on the Biltmore estate, in North Carolina, is remarkable. The forests, which cover 130,000 acres, are made profitable by the production of various forms of material.

Four million feet of lumber, 5,000 cords of tannic acid wood and fuel, a thousand cords of tan bark, and several hundred cords of pulp wood are cut every year. At the same time the forest through wise management is bettered and is steadily increasing in value. Workmen employed along the boundaries of the forest do duty as fire guards. Thus fire protection is secured at least throughout all the accessible parts of the tract.

In connection with all lumbering operations permanent logging roads are built. These minimize the present cost of transportation, and will greatly reduce the cost of marketing future crops. Thus the extension of the roads is steadily adding to the investment value of the forest. Moreover, they serve also as a network of fire lines. Forest planting is practiced where fire will not threaten its success.

The experimental work in silviculture which is done at Biltmore is certain to make important additions to the science and practice of forestry.

"WOODEN HUB" OR FARM WAGON WHEELS.

The wheels of common farm wagons and heavy wagons, known commonly as "drive spoke" wheels, are the kind most often in the shop for refilling and rerimming. A few days ago I saw a man filling such a wheel. He had the old spokes all out and was putting new ones in. He would take a spoke, saw off some of the end (paying no attention to how much), cut off some off the back side of hub tenon and then drive it in with a hammer; I judged, weighed not to exceed four pounds. He had a piece of wood bolted flat with the point of hub and a stick wedged into it for a guage, and as he drove the spoke he knocked it up or down to conform with the guage. Such work is a discredit to our trade.

Now when a wheel comes for refilling the old spokes should

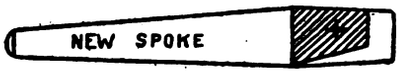


FIG 1

be taken out with as little battering of the hub mortices as possible. Then carefully scrape all shavings, dust and dirt out of the mortices and blow them clean (I keep a small hand bellows around the shop for such purposes). If there is grease in the mortices I scratch it out with a paint burner. Now there is no better way to get the correct measurements for your spoke hub tenon than from an old spoke. Pick up the most perfect one you can find and saw the hub tenon off at the shoulder. This will give you a perfect pattern for your new hub tenons. Now lay this tenon on your new spoke with the face flush with the front of new spoke and mark around it (Fig. 1) with a sharp pencil, and then cut or saw a little to the outside of the marks on the back side of spoke and a little inside on the end. This is where your judgment comes into play, as the hardness of your new spoke and the solidity of the hub must be taken into consideration. If the hub is solid and the spoke is a good one from a pencil mark to 1-16 will be enough to allow for tightening, writes P. P. Greene in Horseshoers' Journal. If you will cut your tenons carefully and carrectly you won't need a gauge, and right here I want to say that for the best results a gauge should not be used, for if your spoke fits the mortice and will drive hard, it's going to "creep" back to the shape of the mortice after it leaves the shop and is subjected to heavy loads, even if

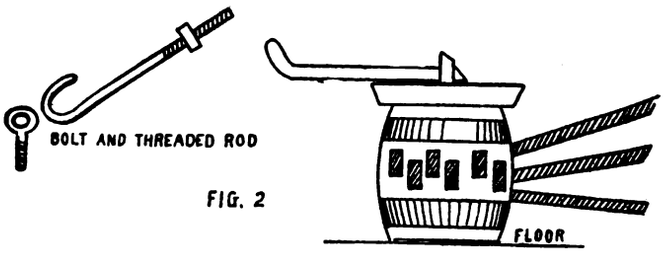


FIG. 2

you have strained it into line with a gauge. Shape your tenon right and start your spoke right and you can't drive it wrong. Next thing, never dip a spoke into paint before driving it. I never knew one to stay tight which was driven in paint. Paints all contain oil; oil is grease; grease won't let a spoke be tight.

Buy good glue for driving spokes. I use a prepared glue, which I get in quart cans and it is the best I know of and requires no cooking. I shape all my spokes and then bolt my wheel down to the floor. (Fig. 2.)

The floor gives a solid place to screw down on and being low one can stand over the work and drive true. I then dip the spoke in the glue or smear a little on all sides, and drive with a ten-pound sledge. If the spokes won't hold what I drive or want to bounce out I keep a box of very fine clean sand and dip the spoke in that and drive, which makes it hold what is gained at each blow. Nowadays most smiths use one of the several tenoning machines to cut tenons which is much easier

Digitized by Google

and quicker than the old way of a bit brace and hollow auger. The next step is to mark the outside of your wheel on the spokes, being careful to get a true circle. This can be done by using a small stick and marking a given distance from the hub band all around. It must be kept in mind that the outside of the wheel is to be a true circle, a wheel not oval, and heavily loaded will soon go down. If bent rims are to be used remember that half the work is saved by buying rims somewhat larger in height than the height of wheels to be used on; viz.: use a

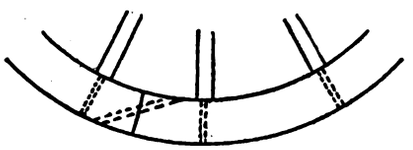


FIG. 3

3.8 rim for a 3.6 wheel. They go on easily. Wedge the felloes or rims on light. Don't bore a ⅞ hole in a 1½ rim, but use judgment in the matter and make your spoke tenons in size proportionate to the thickness of the rims and in doing this, make the tenon fit some standard auger bit, say a ¾ bit for a 1½ rim and make the tenon to fit this hole snug. When a wheel is solid all the way through and not built with one or two inches of dish in it the tire can be set tight enough to hold for years without harming the wheel a bit. See that the rims are down solid on the spoke shoulders. It is a good plan to have a pair of eccentric clamps a yard long and by hooking one end over a spoke close to the hub and the eccentric end on the outside of rim the joint can be pulled down tight. Don't bore a ½-inch hole "slantways" for a dowel hole like Fig. 3, but cross mark your felloe ends and bore straight in and put dowels in as in Fig. 4.

If put in as in Fig. 3 they will often cause the felloes to split off at the ends. Another way of doweling is to find the center of the felloe ends and saw a sawcut a little ways down and use a thin hickory wedge for a dowel, but if this way is used, smear a little glue on the wedge to keep it from pulling out when the tire is set. Before setting the tires give the felloes

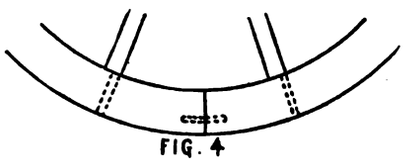
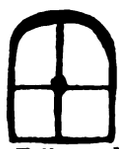


FIG. 4



Felloe end.

a good thick coat of red or white lead and oil. You may feel that this is all elaborate, but if a wheel is put up this way and your customer knows it, he will send his friends and neighbors to get more work like it. I have wheels six years old and the tires have never been loose or reset. Put up good wheels out of good stuff and people will hunt you up to get to pay more for that kind of work. Cobblers and botchers are on every cross roads, but there is good money and plenty of work for good workmen who try each time to turn out a better job than the last. Take pains and then let your customers see that you take pains. If you don't love the trade well enough to do the best you can sell out and go at something you do like. But don't use your eye where a square is needed, and don't drive spokes into a 3¼ wagon with a tack hammer, nor use wood in wagons which should be used to heat tires, for if you do these things some fellow will come along and take all your best customers away.

EVELAND LEAVES ROLLER BEARING COMPANY.

S. S. Eveland has resigned the presidency and general management of the Standard Roller Bearing Co., of Philadelphia. His action is due to the fact that hereafter he will devote himself to the Standard Gas Engine & Electric Power Co., which he recently organized to manufacture motor cars and trucks.

MODERN METHODS OF TRANSPORTATION.

In large cities where time is an important factor in the conduct of business new methods and facilities for sparing that commodity are continually devised, in consequence of which wagon builders are often called upon to exert their best efforts and thought to fulfill the requirements of some of the larger mercantile houses. The latest innovation to save time and handling of merchandise consists of vehicles with extraordinary large bodies, designed to convey smaller bodies—the latter being used to carry the merchandise—to a particular destination where they are replaced by empties and counterparts of the

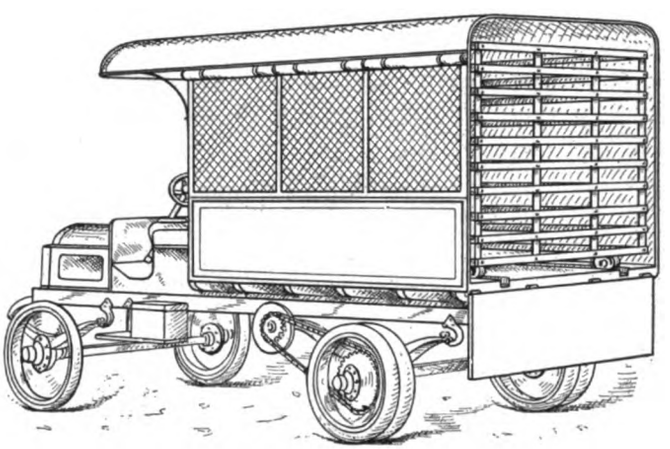


FIG. 1.

others. The vehicle returning immediately to shipping headquarters for another load, substituting the empties with loaded cases, which were prepared during the absence of the vehicle.

The object of this system is to keep the wagon, truck or motor car, whichever it may be, continually in action, except during the short intermission when cases are exchanged. By this arrangement it will be seen the maximum amount of usefulness is derived from the services of the driver and vehicle, and more prompt deliveries made to outlying districts from whence considerable patronage is received.

Our atention has particularly been attracted to an arrangement put into effect by one large department store, which we illustrate in Fig. 1. The vehicle in this instance is a motor car with a body of large proportions resting on the chassis. This body is over 12 feet long and 7 feet high.

The reader will observe in rear end of above mentioned illus-

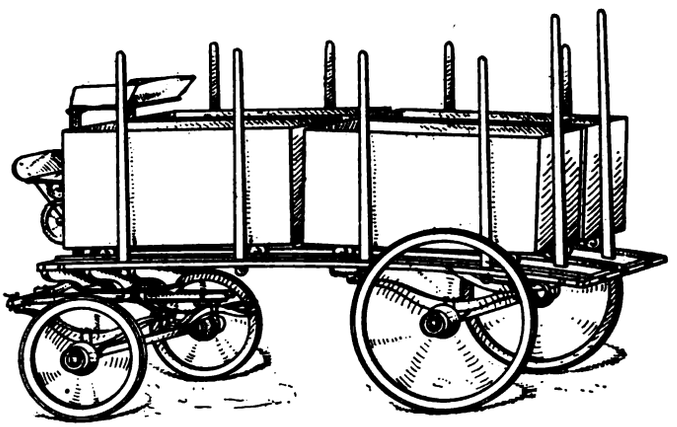


FIG. 2.

tration a slatted body which, in this case, is intended to transport carpets, furniture and household furnishings. The slatted body is mounted on heavy iron wheels capable of carrying two tons and traveling in a groove of channel iron, which is let into the floor of body. There should be at least two of these slatted bodies to each motor car to make the work effective. The

Digitized by Google

main bodies are, of course, supplied with screens beside the tailgate to protect loss of goods.

An arrangement adopted by another large house is shown by Fig. 2, and consists of a horse-drawn truck equipped with a specially constructed windlass to draw upon its pdatform four smaller vehicles or trucks. The latter travel on a track made of angle iron secured to floor of truck and held in place while in transit by rungs at the side and rear.

These small conveyances are utilized in transporting packages and boxes, such as canned goods and all kinds of packed food by a large retail grocery house, from the warehouse to the various branch stores. Here, as in the former case, saving of time was the essential object sought and obtained through the economy of handling the small packages or cans.

THE THIRTY-SEVENTH ANNUAL MEETING OF THE C. B. N. A.

Program of the Washington Convention, October 19, 20 and 21, 1909.

The convention meetings will be held at the Arlington on the office floor.

The meeting will be called to order by the president, Mr. Maurice Connolly, Tuesday, October 19, at 10 o'clock a. m.

Address of welcome by the Hon. Henry B. F. Macfarland, president of Board of Commissioners of the District of Columbia.

Response by a member of the association.

Illustrated address by Mr. Wm. L. Hall, assistant forester, on the "Results of Deforestation."

Opening address of president of the association, Maurice Connolly, Dubuque, Ia.

Nomination of president for the ensuing year.

Appointment of a Committee on Resolutions.

Appointment of Committee to Recommend Officers for the ensuing year.

Appointment of a Committee on the Exhibition.

Appointment of the Obituary Committee.

On this Tuesday evening, October 19, the reception to the members and ladies will be at the Arlington Hotel from 8 to 11 o'clock.

It is the desire of the president and committee that the proceedings should open promptly at the hour named. And to this session all the ladies visiting the convention are most cordially invited.

You are all invited to be present.

Wednesday, October 20, 10 A. M.

Meeting will be called to order by the president.

Report of the Executive Committee, Mr. W. H. McIntyre, Auburn, Ind., chairman.

Report of the secretary and treasurer.

Address by Mr. B. A. Gramm, Bowling Green, O., on "The Evolution of the Motor Vehicle Relative to the Wagon Builder."

Report of the Committee on Good Roads, Henry F. Keachline, Philadelphia, Pa., chairman.

Report of the Committee on Fire Insurance, Mr. T. J. Sullivan, Rochester, N. Y., chairman.

Address by Mr. Charles R. Stevenson, New York, on "One Reason for the Inadequacy of Profits in the Carriage Industry."

Report of Committee on Timber Supply, Mr. O. B. Bannister, Muncie, Ind., chairman.

Report of the trustees of the Technical School, Mr. Charles J. Richter, New York, chairman.

Report of the Committee to Recommend Officers for the ensuing year.

Election of the president. Adjournment.

Thursday, October 21, 10 A. M.

Meeting will be called to order by the president.

Report of the Committee on Freight and Classification, Mr. Theo. Luth, Cincinnati, chairman.

Address by Mr. Hugh Chalmers, Detroit, on the "Principles of Salesmanship."

Report of the Representatives to the National Conservation Commission, Mr. Henry Ratterman, Cincinnati, chairman.

Report of the Committee on the "Abuses in the Carriage and Accessory Trades," Mr. Perrin P. Hunter, Cincinnati, chairman.

Maurice Connolly, President C. B. N. A.

Report of Committee on Improving the Waterways of the Country, Mr. Z. Taylor Rickards, Philadelphia, chairman.

Report of the Committee on New Members, Mr. F. O. Neutzel, Louisville, acting chairman.

Address by Mr. A. G. Brunsman, on the "Adjustment of Freight Rates and the Association."

Consideration of the report of the Executive Committee.

Unfinished business.

New business.

Election of Officers.

Report of the Committee on Resolutions.

Report of the Committee on Exhibition.

Report of the Obituary Committee.

Selection of the place for the next convention.

Adjournment.

Annual Banquet.

The annual banquet will be held at the New Willard Hotel, Thursday, October 21, at 7 p. m.

The attention of members is particularly called to the excellence of the program for these meetings, and to the prominence of the speakers secured to deliver the addresses. Each one of the gentlemen who are to speak on the interesting subjects assigned them are experts in their lines, and the subjects chosen are of vital importance to all.

As there is no hall connected with the Exhibition Building large enough the business meetings will be held in the Arlington Hotel, on the office floor.

The exhibition will be in the Convention Hall, Fifth and L Streets.

The annual reception will be held at the Arlington, Tuesday evening, October 19, from 8 to 11 o'clock.

The local committee, to which is entrusted all the arrangements for entertainment of this year's convention, is made up as follows:

Rudolph Reigel, 710 O Street, N. W.; Chas. Mason (G. W. Mason & Sons), 1074 Jefferson Avenue, N. W.; Benj. M. Meeks (S. J. Meeks' Sons), 622 G Street, N. W.; John F. Beck (Wm. Walters Carriage Co.), 319 14th Street, N. W.; Joseph McReynolds (R. McReynolds & Sons), 1425 L Street, N. W.; Wm. E. McReynolds (R. McReynolds & Sons), 1425 L Street, N. W.

Digitized by Google

PAINTING AND UPHOLSTERING

RAPID PROCESSES OF DRYING VARNISH.

The question has lately been raised in some quarters if it were not feasible to furnish a drying room, heated to a temperature something above 100 degrees, in which to place freshly varnished surfaces for the purpose of drying them quickly, thus facilitating the rapid handling of work and thereby increasing the output of the shop.

We are inclined to think that this practice cannot be depended upon to produce satisfactory results unless the workman can be induced to do his varnishing in an equally high temperature. To apply the varnish in a room warmed to a temperature of 70 degrees, or possibly 75 degrees, and immediately set the work away in an apartment heated to 110 degrees, more or less, is more than likely, in the case of most varnishers, to cause the varnish to drop into sags and curtains and cut other unlovely capers upon the surface. Only recently we witnessed this theory worked out in practice, and the very result referred to ensued.

If varnishes are to be subjected to this form of baking, mild as it may appear, the varnish maker must perforce radically change his methods of manufacture.

A baking varnish especially made for the purpose may be expected to undergo the forced system of drying in a superheater apartment, but the present high-class, extremely well-balanced varnishes used in vehicle work cannot be trusted to stand the strain.

What the carriage and automobile painter really needs to accelerate his work in the varnish room is not a bake shop, but a room warmed to a temperature of, say, 75 degrees, this to be maintained uniformly until the work is ready to handle. The average rubbing or finishing varnishes, such as The Hub in its advertising pages monthly speaks to you about, will dry quick enough to meet the demands of ordinary service in a temperature suggested above; the only provision being that the heat be non-varying, and that the ventilation be of a sort to yield a practically uncontaminated air.

If we are to take up the use of baking enamels, lacquers and the like, then, of course, we must prepare to convert the varnish room into a baking oven. Until the dawn of that day, why not scorn tomfoolery, continue our work in a rational way and get good results by deserving them?

THE PAINT SHOP APPRENTICE

The absence of the apprentice from the paint shop has been widely deplored. It is not, however, an unaccountable absence. The spirit of the age in which we live has rejected the system under which, in earlier days, boys were induced to learn the trade of carriage and wagon painting. A thousand and one pursuits now open to him were formerly unknown. Lives were then lived more leisurely. Trades called for men trained, educated and disciplined in every department. To-day the reign of specialism is supreme, and it long since invaded the paint shop, to the exclusion of the apprentice. A traveling salesman whose business it is to visit carriage, wagon and automobile paint shops, recently told the writer that the country carriage painter, so-called, is practically extinct—gone the way, apparently, of the old time carriage builder whose sign greeted the traveler at almost every village half a life time ago.

With the passing of this class of painters the indentured apprenticeship system vanished as an affair to be seriously reckoned with. To-day it is difficult to enforce the provisions of even a mild substitute. The manufacturer's enforced specialism system by which the boy or man is taught to do one thing with surpassing dexterity and swiftness has driven the apprentice, as we formerly knew him, completely out of the paint shop, save in rare instances. In vain we may suggest paying the boy $4 or $5 a week as he enters his term of apprenticeship, and heartily concur in the report to advance his wages proportionately annually, and to push forward his education along technical lines with the utmost celerity.

The boy will have none of it. On every side, in almost any trade, he observes the youth and the handy man graduating at the end of a few months, at most, into specialists, commanding a substantial wage rate, and even going up into places of responsibility at flattering salaries. He reasons that it is a day of opportunity, and objects to the apprenticeship course as being too slow, and offering insufficient advantages.

Nevertheless the situation is not without promise, for, after all, the bright boy is bound to make his mark in the paint shop, as elsewhere, without the aid of a full-fledged apprenticeship system.

ROUGHSTUFF AND GUIDE COATS.

The tendency seems to be among painters, or a considerable body of them, at least, to use roughstuff coats too heavy in consistency. This practice is wholly wrong, and develops "brushy" surfaces and short lived ones. We must get back to the old practice of using roughstuff sufficiently light in consistency to work out smooth and free under the brush, and to flat down like any ordinary coat of paint, without a ruffle or a trace of brush marks. That means, among other things, more attention given to mixing the roughstuff. It is a pigment, despite its coarse nature, which needs thorough mixing, beating out to an impalpably fine mass, and given a sufficient drenching with turpentine to whip the natural viscosity of the pigment entirely out of it. Then the stuff requires a smooth and uniform application—as perfect, in fact, as you would give any coat of paint.

Guide coats are unnecessary, and in many of the best shops they are obsolete, the claim being made that a good roughstuff rubber should be able to judge when the proper surface is reached, which claim is correct. The so-called guide or stain coat is a misnomer. Like the vermiform appendix, it's useless.

STRIPING NOMENCLATURE AND SOME COMMENTS ON STRIPING IN GENERAL.

In striping the various styles must have specific names, as they in fact do have, in order to facilitate intelligent results in this department of work.

What in shop vernacular is termed the hair line is the finest line used in vehicle work. The fine line comes next this being about the width of two hair lines drawn side by side. The medium fine line for easy definition may be understood as three hair lines drawn side by side. Next comes the stout line which is practically three fine lines drawn together. Between this line and the round line a half space is added by city stripers and the line is then called a medium stout line. The round line represents double the width of the stout line, and the medium round line has the width of a hair line added to it.

We now come to the stripe which is a width and a half of round line. The medium stripe is the stripe with a hair line width added to it. Double, triple and other combinations of lines and stripes represent simply paralleling these various styles in connection with the heavy and broad stripe to produce certain desired effects.

In case of light pleasure vehicles where a rather conspicuous

Digitized by Google

striping color is to be employed over a field of dark color—a white striping color over a dark blue ground, to illustrate—the single and double hair line is effectively employed. Or this same dark field may be enriched by casting upon it a double round line, three-eighths of an inch apart, and then run a hair line at the center of the space between. Make the round lines, for example, of ivory drop black and the hair or fine line of arctic white. This style may be changed by using a simple stout or a single round line of black and paralleling this line with a distance hair line on either side of white.

On red or maroon surfaces the double stout and the double round line are often effectively employed, the lines being drawn in black. Contrasting lines of red are now being much used in displaying the stout and fine lines in various combinations upon the red fields. All these lines, however, for their best development as surface beautifiers should be accurately drawn. In this matter of accuracy there is this to be said. The machine-like precision of lines is not desirable, because through them whatever artistic element attaches ordinarily to such work is lost. The accuracy of the practiced striper, the man who gives all his work a real touch of the artistic is the feature invariably sought for in all striping and ornamental work applied to the carriage.

Much depends upon the striping pencils, and the care given them, when the question of stripes and striping is under consideration. Some workmen plaster their pencils against a dirty window pane and then marvel that results are not more satisfactory. Pencils, striping, ornamenting and lettering, are probably the most delicately and sensitively organized tools which the painter is called upon to handle. They can easily be spoiled by a turn of foolish treatment. We favor a dust and dirt proof receptacle in which are to be arranged trays for holding the pencil equipment. Do not stick the pencil against the glass. Simply saturate it with some non-drying grease, straighten out the hair and mass it into its natural shape and body, and lay it upon the tray. After use always wash all the paint out of the pencil, then roll it between the fingers to dry the stock out, after which grease and lay away.

TESTING WHITE LEAD.

Although the carriage painter is not at the present time using as much white lead as did his predecessors, it is quite as essential now as it was then that the supply should be precisely what the manufacturer recommends it to be.

That white lead adulteration is extensively carried on fairly goes without saying. Reports of tests recently made public show an astonishing measure of prevailing sophistication of the white lead product. So much so, in fact, that the consumer appears to be practically at the mercy of the firm or corporation that chooses to sell lead for what it is not.

For many years one of the tests which upon the recommendation of the confiding manufacturer has been employed by the carriage painter to demonstrate the value of white lead is that listed as "the blowpipe test."

When it is understood, and as the situation actually exists, that under the heat of the blowpipe red lead, litharge and some of the chromates, yield metallic lead just as does a carbonate of lead, the utterly unreliable nature of the blowpipe test can be easily apprehended. It has been recently affirmed in public that a dozen or more white compounds of lead, some of them in no respect belonging to a well-balanced paint, will yield metallic lead under the blowpipe.

The principal lead adulterant probably is barytes, a sulphate of the metal barium, said to be obtained from both natural and artificial sources. And in passing we may add that it is the most important paint extender known. Barytes is nearly the same gravity as lead, whereas gypsum, china, clay, magnesium silicate, and possibly a few other extenders, are much lighter in gravity. It is asserted in some quarters that it would be cheaper to furnish the pure lead than to attempt adulteration with these latter pigments on account of the great quantity of oil required in grinding them, and the size to which they would increase the package. Be that as it may, the fact is conceded that barytes is the fairly all-prevailing adulterant of white lead at the present time.

The test that would seem to appeal most to the purely practical man desirous of ascertaining the purity of his white lead supply is called the nitric acid test. Pure carbonate of lead is dissolved by nitric acid, whereas barytes is pronounced nonsoluble in alkalies, acids or alcohol.

The nitric acid test was very clearly explained by Mr. J. B. Thompson, of Toronto, Canada, at the last annual convention of the Canadian Association of Master House Painters and Decorators. In substance the directions are to wash out a sample of lead by mixing it thoroughly in an earthen jar or glass can with benzine. When the lead has settled to the bottom, pour off the fluid and add a fresh supply, repeating this operation several times, or until the oil is entirely extracted. Then spread the lead in an open dish and expose to the air until, under a palette knife, the pigment crushes to a fine powder. Then into a glass tumbler place all the lead powder that will cover a dime.

Have your local druggist furnish you with an ounce (1) of nitric acid confined in a four or five ounce bottle, and then into this bottle pour two (2) ounces of water. Be careful to add the water to the acid, and not the acid to the water, and as a further precaution wipe the acid bottle only with paper. Mr. Thompson explained that to wipe the acid bottle with rags or cotton cloth makes gun cotton, a highly explosive substance.

The acid solution is now poured over the lead powder. In case of pure lead the pigment should be dissolved, leaving a clear liquid. The barytes, if any, contained in the sample will remain at the bottom of the glass undissolved.

This test is sufficiently simple and conclusive in determining the purity of lead to enable any painter to avail himself of it and thereby protect his business.

Concerning fineness, covering and working properties, etc., The Hub has in earlier issues gone into details, and they need not, therefore, be repeated here.

BRUSH CARE-TAKING.

Every painter should respect the admonition of his employer that brushes cost money. He should also respect the assurance that a really good brush grows better, up to a certain stage, the more it is used, provided it is used right—that is, skilfully and intelligently. Actual care taking of the brush consists of carefully handling it while working, and then placing it in storage in a way to preserve its good qualities while idle.

Brushes should never be kept in uncovered pails, cans or whatever the storage receptacles happen to be. They should, moreover, never be allowed to rest upon the point when not in use. All brushes, even the ones used to apply the coarse pigments, should be suspended from wires or metal clasps, attached to the keeper. Change the water or liquid in which the brushes are kept often enough to insure clean conditions. Foul or rancid water or liquids generate decay in the brush and hasten the end of its usefulness. Wipe the brush clean and wholesome before hanging it away. Keep it, so far as possible, in its natural shape. A well-kept supply of brushes is a working capital which pays a rate of profit proportionate to the care taking applied to it.

TO BE READY DECEMBER 1.

The new factory being erected by the Tudhope Carriage Co., at Orillia, Ont., will be ready for occupancy December 1, and will have double the floor space of the old plant which was desroyed by fire. The new plant will be modern in every particular and will be one of the most complete carriage factories in America.

The greatest man is he who asks for nothing that all humanity would not be the better for having and using.

Digitized by Google

Among the Manufacturers

Will Move to Meridian.—The Queen City Wagon and Manufacturing Co., of Lake, will move its plant to Meridian, Miss.

Erecting Warehouse and Paint Room.—The addition now being built to the plant of the Glen Wagon Co., Seneca Falls, N. Y., consisting of a four-story frame building 50 by 100 feet, will be used for a warehouse and paint room.

Iowa Carriage Concern to Build Cars.—The Spalding Carriage Co., of Grinnell, Ia., has decided to embark in the manufacture of automobiles. Three new buildings are being added to the old factory for this purpose. The cars will be called the "Spalding."

Reliance to Build Automobiles.—The Reliance Motorcycle Co., Owego, N. Y., has commenced the manufacture of automobiles as well. At present they are buying nearly all the parts, but a project is on foot for local capital to build a more complete motor car factory.

Will Try Again.—The Union Carriage Co., St. Louis, Mo., which built a number of automobiles and then discontinued their manufacture, is making ready to again engage in the business. An entirely new car has been designed in furtherance of the plans.

Looking for a Location.—A representative of the Miles Bros. Hickory Manufacturing Company, of Des Arc, Ark., has been in Lonoke, Ark., looking for a location on which to erect a plant for the manufacture of spokes and wheel rims. If they can secure a location on the Rock Island right of way they propose to have a factory running within sixty days, which will employ from 15 to 20 workers.

Will Make Auto Bodies.—The Drummond Carriage Co., of Omaha, Neb., is closing out its line of fine carriages and buggies to make room for an extensive automobile repairing business as well as the manufacturing of auto bodies, tops, etc.

Cunninghams Incorporate.—The well-known builders of hearses, coaches and high-grade vehicles, James Cunningham, Son & Co., of Rochester, N. Y., has been incorporated with a capital stock of $1,200,000 by James Dryer, A. J. Cunningham and J. W. Fulreader.

Will Increase Capital.—A meeting of the Cooper Carriage Woodwork Co. will be held in St. Louis November 4 for the purpose of voting on a proposed increase capital stock to $80,000. It is now capitalized for $70,000.

To Build Aeroplanes.—The Swivel Buggy and Wagon Co. has been incorporated at Richmond, Va. Its charter empowers it to build buggies, wagons, automobiles and flying machines. It is announced that it is the company's intention "to build aeroplanes for the markets of the world."

Branching Out.—Owing to increasing business the Clark Carriage Company, of Amesbury, Mass., has leased the old plant of the Hume Carriage Company opposite its present plant on Carriage Hill.

Will Build Power Wagons.—The Brockway Carriage Co., at Homer, N. Y., has contracted to build thirty 15-horsepower motor trucks.

Another Carriage Maker to Build Autos.—The United States Carriage Co., of Columbus, O., has announced its intention of joining the manufacturers of automobiles and will have a four-cylinder gasoline car for sale next season. The line will consist of touring cars, runabouts. hearses, cabs and ambulances. It is expected that the first of the production will appear early in January.

Electric Welding.—An electric welding plant will be a feature of the equipment of the plant of the Moline (Ill.) Pole and Shaft Company now under course of construction.

To Build Large Addition.—The Fremont (Neb.) Carriage factory expects before winter sets in to put up an additional brick building about the size of its present plant, either on the ground adjoining on the south or for warehouse purposes on a tract elsewhere.

Glunt Bros. in Control.—A deal has been consummated whereby the Glunt Bros., implement dealers, have secured an interest in the Ross Carriage Works in Union City, Ind., and they have already assumed the duties of the respective offices: E. L. Anderson, president; John H. Glunt, vice-president; Samuel P. Glunt, secretary.

After the Bodley Plant.—One of the largest wagon and buggy factories in the South may open for business in Memphis if the negotiations for the old plant of the Bodley Wagon Works in South Memphis result favorably for the Southern Vehicle Company of New Orleans, which has been after the same for some time. The Southern company would give employment to some 200 high-class workmen and there would be large expenditures for improvement of the plant property.

New Carriage Hardware Company.—Peter P. Rowan & Co., Ltd., is the title of a new company organized for the purpose of carrying on a general business in heavy hardware, carriage and wagon material at Oklahoma, Okla.

A Big Order.—The Banner Buggy Company, of St. Louis, recently gave what it claims was the largest single order for vehicle axles ever placed by a carriage manufacturer in the United States. The order was given to George B. Ogan, St. Louis manager of the Hess Spring and Axle Company, of Carthage, O., and for a train load (thirty cars) of the axles, to be shipped as fast as they can be produced.

Working Eleven Hours a Day.—The LaPorte Carriage Company is working its entire force for eleven hours a day. The great business in the manufacture of automobile bodies which this company is doing is responsible for the increased activity. The company is also doing a nice business in carriage building.

Mandt Company to Enlarge.—The Mandt Wagon Works at Stroughton, Wis., will shortly build an addition to cost $100,000. It will be in the form of a power house and workshop and will have an electric generator of 650 horsepower. It will furnish employment to about 1,000 additional men.

Changes Hands.—W. H. Matthews, who for nine years has been connected with the Kimball Shoe Co., has secured controll of the Sanborn Carriage Co. at Manchester, N. H. Mr. Matthews will make a number of improvements to the building now occupied by the Sanborn Co.

New Rim and Shaft Company in Operation.—The Kentucky Rim and Shaft Company, of Louisville, Ky., recently incorporated, has bought the wood-working plant of the Skinner-Russell Company, on Central Avenue and First Street, for $12,000. The company recently acquired the plants of the Louisville Spoke and Bending Company and the Louisville Woodstock

Digitized by Google

Company, and is planning to construct a large wood-working establishment for the manufacture of wagon and carriage woodwork. The plant will occupy the entire block between the Louisville & Nashville Railroad shops and O Street, and from First to Second Streets. The main building now occupying the site is 300 feet long, and affords accommodation for several hundred workmen. H. F. Donigan, formerly of the Todd-Donigan Iron Company, is the chief spirit in the new enterprise.

No Taxes for Ten Years.—The City Council of Seymour, Ind., passed an ordinance without a dissenting vote exempting the Ahlbrand Carriage Co. from taxes for ten years.

Receivership Will Soon Be Terminated.—Colonel T. J. Kauffman, a prominent official of the Kauffman Buggy Company, of Miamisburg, O., which went into the hands of a receiver several months ago, announced recently that the receivership would soon be terminated and that the plant would in all probability be transformed into an automobile factory. With the closing out of the vehicle business one of the oldest concerns of its kind in the State passes out of existence. The plant covers several acres. Dayton and Miamisburg capital will finance the new industry.

LABOR AND CAPITAL IN AUSTRALIA.

The following article from the Australasian Saddler and Harness Maker is interesting reading and shows a few of the many difficulties encountered in endeavoring to establish Eutopian ideas:

Employers in New South Wales have already been furnished with reason to convince them that the new Wages Board Act is much more serious than the Arbitration Act which is superseded. A baker at Sydney was last month fined something over £170 for failing to pay some of his workmen overtime; a slater was fined over £30 for dismissing a couple of unionists; a master painter had to pay £113 in fines and costs for paying nine workmen a penny an hour less than the rate fixed by an award. Besides these there have been other cases which have never been mentioned in the press.

In some cases the workmen concerned have also been fined, though the sums have been small.

The reasons for which penalties are inflicted in the Industrial Court sound strange to one who is familiar only with the usual order of things. The old idea that two men are at liberty to make what terms they like affecting themselves now no longer obtains. For instance, while a representative of the Saddler was in court at Sydney, nine journeymen painters were being examined by his Honor Judge Heydon. Some were summoned for accepting work at 1s. 2d. an hour, and others for accepting 1s.

The first pleaded guilty, and said he was forced to take the job on account of being heavily in debt. He had not long returned from New Zealand. He answered an advertisement in the daily paper. The advertiser said he was only taking second grade men. Other applicants gave way to him, as he was a married man.

The second man called pleaded guilty. He was asked by his Honor what he had to say for himself for working under the rate, and competing in that unfair way with his fellow workmen? He said he had been told the job would only stand 1s. an hour.

The third man said he was out of work for some time, and could not get work as a first grade man. He was married, and, being offered the job at 1s. per hour, took it.

The fourth man said he had formerly received nothing under the minimum wage. He was out of work and had a family to keep. He was offered the job and took it. He added that he did not consider himself a first grade man, and, further, did not understand the definition of a painter contained in the award.

"What made you fall into disgrace?" asked his Honor, when the fifth man was presented. "I was hard up, your Honor, was offered the job at 8s. and accepted it," was the reply.

"I suppose you, like the others, was hard up," remarked his Honor to the next offender. "Yes, your Honor," was the reply. "I am only a second grade man, an ordinary brush hand, and can do only an ordinary bit of brush work." He added that he was walking the streets and accepted the job at 1s. per hour.

The next man explained that he thought he was doing quite right in accepting 1s. per hour. He understood the award bound only members of the union. He had left the union for that reason, as he thought that otherwise he would not be able to keep his family. He had never had more than a stretch of seven weeks' constant employment.

Another workman said he was only second grade, and did not think he could get 1s. 2d. per hour.

His Honor: "But you are a good workman?"

"No, I don't call myself a first class man."

"But you got 1s. 2d. an hour. Evidently you are a good man of business."

The last man examined protested that he had done nothing wrong, and pleaded not guilty. He had worked for 1s., which was the rate fixed for second grade men.

His Honor said he found him guilty. He had only a right to work for 1s. an hour after making an agreement with his employer, and notifying the secretary of the union.

Each workman was then fined 5 shillings, and the employer £10 10s., with £2 2s. costs, in each of the nine cases.

After the men had paid their fines their comments showed they appreciated the novelty of the position. Some seemed astonished that they should be regarded as criminals because they had, under stress of circumstances, honestly done the best they could for their employer, themselves and their families. A criminal act is generally understood to be taking more than you are entitled to, or the result of being idle or without visible means of support. The offences committed by these men were the reverse. It was proved, first, that they were over anxious for work, and, second, took less than they were entitled to. "It is pretty rough," as one of the offenders remarked, "that a man should be fined because he prefers working to loafing." Another, less sentimental, asked how they could get from the employer the difference between what they had accepted and what the Court said they should have got.

In another similar case to that of the employer referred to above, his Honor said, "I don't think this case is a bad one. It is not a case of a man cheating or imposing upon his fellow men." Nevertheless, he fined him £3 10s. with £4 4s. costs.

TWO HORSES.

Two strange horses face to face
Were standing in the market place,
One hitched unto a huckster's cart,
The other to a turnout smart;
And, lonesome in the busy throng,
Which heedless of them passed along,
Rubbed noses in a friendly way
And whispered greetings, in their way.
Said one, at length, "You little know
Of all a highbred's horse's woe,
How sensitive and highstrung we,
How galled our spirits proud and free,
For you were made to plod your way
And toil and bear the yoke all day;
Not cursed with finer feelings—no
Of course, you little guess our woe."
"Yes," said the carthorse, with a sigh,
"I know, though but a plodder I,
Though miserably fed and shod
And beaten oft with whip and rad,
Though not well-groomed and sleek and grand
In strength, like you, I understand,
For I was once like you—and see
What you may some day be in me."

Digitized by Google

BALTIMORE LETTER.

A Hub Representative Finds Business Conditions Good Among the Accessory Manufacturers.

Baltimore, Md., Oct. 10.—The carriage and wagon manufacturers are all quite busy, especially the wagon trade, but the fine carriages are not selling fast, there being only a normal demand for this season of the year. Some of the repair men are behind on orders and have been busy all the year. Of course the carriage trade has been badly hurt by the automobiles, but as this is not a good city for automobiling on account of the many hills and poor pavements, there is still a fair demand for carriages.

Accessory manufacturers, of which the city has quite a number, are quite busy. The hub and wheel manufacturers are well satisfied with present conditions as they are doing a good business. Prices have advanced more or less in most all lines connected with their trade.. Cotton ducking and canvas has gone up and is in fair demand. Patent leather is higher; carriage hardware is up in some lines, but there is no general advance.

There is some export business being done and that is reported as quite active. Considerable supplies have been shipped to the Panama Canal and to all South American countries, and a fair amount to Europe.

Baltimore is waking up. The upholsterers and manufacturers are making a special bid for the southern trade. The Merchants and Manufacturers' Association recently held a buying convention, and 1,500 business men from the South attended, and it was a remarkable success. Each one that bought a certain amount of goods had his fare refunded.

The Baltimore Hub and Wheel Manufacturing Co., 326 North Holliday Street, make this report: "We are busy; prospects are very good; have had some large orders, more are coming in. The business is in good condition, but collections are backward. We just filled an order for the United States Government of $6,000 for wheels for the Panama Canal and have quite a few export orders on hand. The factory was removed two years ago to the B. & O. R. R. and Hartford Avenue, where we doubled our facilities and have sixty hands working. We turn out 5,000 set of wheels as an average a year. Have representatives in Germany and England who are doing well. We have gone into the manufacturing of high-grade platform gears and do a general jobbing business in carriage and wagon hardware and supplies and carry a line from tar to the covering of carriages. For the hardware trade we sell locally, but for hubs and wheels we have selesmen throughout the West where we do a large business. Prices for these have not varied much during the past two or three years. We are also forging manufacturers, and some cuts of 25 to 30 per cent. have been made. The axle manufacturers have made reductions. We use mostly elm, gum, locust and hickory. The gum comes from around here, the rest from the West. We bought a tract of timber of 1,500,000 feet in Virginia and put up two mills." Robert C. Loock attends to the financial end and Frank M. Gorsuch attends to the factory end.

Frank Dietz has bought out the carriage and wagon manufacturing business of the Joseph Spiegel Estate of 502 Clinton Street. It is a nice plant and he expects to do a large business.

Herman Born & Sons, of Wausche Street, making carriages and wagons, are very busy and have orders in for months ahead.

E. Lehnert & Sons, 223 North Street, are doing the same business year after year in carriage and wagon repairs.

Matt Lynch, of 400 North Street, is doing more wagon building and repairing than he has ever done and is a busy man.

F. W. Gessford, carriage and wagon factory, 419 North High Street, has been sick for some time and his business has been taken over by Mr. Ziegel.

The King-Harbach Co., of North High Street, have a large carriage repository and are doing a nice business. They are building a large addition to the business there and have a carriage and wagon plant on East Fayette Street.

R. W. Norris & Sons, 348 North Gay Street, have made several improvements to their wholesale building. Prospects look good for the fall business, and they report a good demand in general for all kinds of carriage, wagon and auto supplies. Their large building runs back to High Street, and they have a building at 516 West Baltimore Street.

Bauer & Kaufman, 329 North Howard Street, have a large carriage and auto body repair trade. They cannot handle all the trade and are looking for a larger factory where the business is to be enlarged considerably.

Piet-Robertson-Rainey Co., 108 South Howard Street, wholesalers of carriage supplies, are a very progressive firm and have built up a large business. On staple goods they report prices firm and in fair demand. All cotton top materials, ducks, canvas, etc., are in strong demand, and the factories are slow in filling orders. A great deal is done here in this line. All cloths are up; patent leather is up 15 to 25 per cent. Hanson Dean, who was with the E. Stoppani Co., will take out this line through Maryland and Pensylvania, and Thomas Carney, late with O. F. Day, Son & Co., will take Maryland and Virginia.

Architects Haskell & Barnes have drawn plans for a new carriage depository for William J. Tickner & Sons, undertakers. The building will be three stories in height, of red brick, with store trimmings, to be built on Pennsylvania Avenue, near North Street, to be 50x79 feet in size. It will cost $25,000 and have all modern improvements.

The Leonhardt Wagon Manufacturing Co., 412 East Saratoga Street, have built three 85-feet aerial fire trucks, and are still shipping tour wagons, one now going to Brazil. A lot of dump wagons are built by them, and quite a few tank wagons have been shipped to Panama. A good order of wagons is being filled for the Government for carrying life-saving boats.

The Baltimore Carriage and Wagon Manufacturers' Association held a meeting recently and discussed the question of unbusiness-like price cutting. Considerable work has been done at less than cost. Each member is to get down to figures and find out the exact cost of production, and then a systematic basis of charging for repair work will be established. There are fifty members in the association and an effort is being made to get all outsiders in. William Leonhardt is president, and has sent out leters to the trade asking them to join.

William Bowers & Son, carriage dealers to the high-class trade, at 14 West Saratoga Street, say that the sale of new carriages is not strong. They are doing a lot of repair work, including autos. About thirty hands are employed. At Bower's Emporium may be seen some very interesting old relics in the carriage line. One is Tom Thumb's buggy, which is about big enough for a good-sized doll. It is now the property of Mrs. T. Harrison Garrett. Her husband was the son of the late Robert Garrett, president of the B. & O. Railroad. Another carriage shown made five trips during the 50's to the mining regions of California, through the mountains and trails, and is in good condition to-day. It was made by Bowers. It belongs to D. K. Estee Fisher. There are carriages to-day being driven along the shore roads that were made by the grandfather of the present Bowers, and are good to-day.

William R. Bowers, the son of William Bowers, is a great poultry fancier. If any one wants to sell goods to Bowers all he has to say is "chickens." William T. Bowers, Sr., is 73 years of age and recently celebrated his fiftieth wedding anniversary. The bridesmaid and best man were also present.

John Stinson, who was with the Baltimore Hub & Wheel Co., retired from business and sold it out to Robert Loock and Frank M. Gorsuch.

The Edward Hudson Mfg. Co., 327 North Street, making wagon wheels and hubs, has been in existence thirty years. They say the outlook for business is good and prospects are bright for this fall. They are running full time, ten hours a day. The lumber they use comes from Maryland and Virginia.

Digitized by Google

Prices are stiffening on wheel material, but have not changed so far on the manufactured goods, but a rise is expected. More hands will be put on in the fall. Their wagon business is quiet, but they look for a change. They do some export business to Europe, and have an agent in England. They make only high-grade hubs, spokes and wheels. A considerable amount is sold here and a good trade is done through the South, in New York, Cleveland and the West.

P. D. Schmidt & Co., 209 North Street, are doing a large business in carriages and wagons, and are agents for the Columbus Buggy Co. vehicles.

THE N. A. A. I. & V. M. ANNUAL MEET.

Secretary W. J. Evans announces that the annual meeting of the National Association of Agricultural Implement and Vehicle Manufacturers will be held at the Annex Hotel in Chicago on October 27, 28 and 29.

"Arrangements for the convention are progressing satisfactorily under the direction of the local Entertainment Committee, composed of our associate members," says Secretary Evans. "The mornings of the convention days will be devoted to regular sessions of the association; the afternoons to committee work and conferences; and the evenings to social functions. On Wednesday evening there will be a theater party at one of the most prominent theaters; on Thursday evening a grand ball; and on Friday evening an elaborate banquet. Other forms of entertainment will also be provided by the Entertainment Committee, but it is earnestly hoped that the morning sessions will not be interfered with in any way by personal business engagements or other diversions.

"An effort is being made to secure a very large attendance, and it is confidently expected that conferences can be arranged in the afternoons between those engaged in the same lines of manufacture; for example, the road making machinery people who are present will be invited to a conference to which others will not be admitted. The same kind of conferences will be arranged for those engaged in other lines of manufacture."

REALLY NEW.

The Valentine coach colors have always been of the most dependable kind, and the shades and tones have been those most usual and best adapted to coach work, but automobile body painting has seemed to call for originality and novelty in coloring that has put the color blender to his trumps, if we may so express higher effort in the chemistry of colors.

Valentine & Company has just put upon the market for the spring of 1910 six new colors that are actually distinctive, and will, without doubt, meet with the cordial approval of the man behind the brush.

Briefly, they comprise "Fire Blue," a blue of good body and permanence, carrying great richness of color effect.

"Hudson Gray," something actually new in the grays.

"Phenomenal Carmine," here again novelty as well as a brand new tone is offered. It is a solid covering carmine of extraordinary covering quality. Its success with painters is assured, as one pound goes as far as three pounds of the familiar imitation carmine.

"Roman Green" lends its aid in giving permanency to the greens, and carries fine covering properties.

"New England Vermilion" is a pigment that shades about like pale English vermilion, possessing a delicate lightness of tone that makes it just what is desired in certain work.

"New Maroon" is a permanent, fine, rich, lake color.

It is not often that such a palette-full of new and desirable pigments is offered for the consideration of discriminating painters all at one time. It is fair to presume that they will be glad of the opportunity offered.

Man's opportunity is always the present moment. To-morrow is what to-day makes it.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE CARRIAGE INDUSTRY.

Patents Expired July 26, 1909.

479,478—Road Cart. Joseph C. Valentine, Watertown, N. Y.
479,495—Vehicle Wheel. Thomas F. Foley and John E. Foley, Jackson, Mich.
479,618—Metallic Frame for Wagons—William P. Bettendorf, Davenport, Ia.
479,619—Metallic Frame for Wagons. William P. Bettendorf, Davenport, Ia.
479,620—Metallic Frame for Wagons. William P Bettendorf, Davenport, Ia.

Patents Expired August 23, 1909.

481,190—Automatic Brake. John H. Priestley, Meridan, Ia.
481,197—Pneumatic Tire. Charles H. Roth, Cincinnati, O.
481,230—Nut and Bolt Wrench. John Hoval, Stafford, Tex.
481,301—Whiffletree Connection. Alonzo Haggerty, Cambridge, Pa.
481,303—Vehicle Spring. Dewitt C. Hamlin, Great Bend, Pa.
481,342—Spoke Extractor. Wallace F. Bowe, Meriden, Conn.
481,357—Draft Equalizer. Almon Hunt, Atlantic, Ia.
481,358—Jump Seat for Vehicles. George H. Hutton, Baltimore, Md.

Patents Expired August 30, 1909.

481,545—Axle Bearing. Samuel S. Arnold, Toronto, Canada.
481,549—Anti-rattler for Thill Coupling. Clarence A. Carman, Paterson, N. J.
481,603—Hub Attaching Device. Isaac Van Winkle, Dysart, Ia.
481,619—Vehicle Pole. James P. Johnson, Springfield, Ill.
481,655—Fifth Wheel. Henry Olson, Winona, Minn.
481,791—Vehicle Pole Tip. Thomas J. Houghton, Lancaster, Pa.

Patents Expired September 6, 1909.

481,961—Thill Coupling. John E. Miller, Alleghany, N. Y.
481,971—Spring. George L. Potter, Fort Wayne, Ind.
481,996—Neck Yoke. Jacob Ziegler, Arlington, Neb.
482,027—Vehicle Brake. Eli Swartz and Daniel S. Beemer, Scranton, Pa.
482,064—Vehicle Seat—Thomas B. Padgitt, Dallas, Tex.
482,114—Sulky. John B. Armstrong, Guelph, Canada.
482,154—Vehicle Running Gear. Charles S. Beebe, Racine, Wis.
482,175—Vehicle Wheel. George Hollafolla, Syracuse, N. Y.
482,189—Carriage. Augustus N. Parry, Amesbury, Mass.

Patents Expired September 13, 1909.

482,370—Draft Equalizer. John Lamuth, Irvington, Ia.
482,385—Spring for Vehicles. Harry R. Raudenbush, Vicksburg, Pa.
482,418—Vehicle Wheel Hub. Lorens Swenson, Cresco, Ia.
482,471—Vehicle Shaft. William R. Cullison, Englewood, Ill.
482,475—Bending Vehicle Shafts. Orlando A. Goldsworthy, Chicago, Ill.
482,490—Wagon Rack. George T. Stehling and John Bloomer, Milwaukee, Wis.
482,504—Spring Draft Attachment. Robert Boettler, Cleveland, O.
482,622—Draft Device for Whiffletrees. Quintis V. P. Day, Dinuba, Cal.
482,597—Vehicle Running Gear. James W. Taylor, Vermillion, S. D.

Patents Expired September 20, 1909.

482,739—Two-Wheeled Vehicle. Jackson W. Hewitt, Jackson, Mich.
482,839—Running Gear for Vehicles. Charles M. Blydenburgh, Riverhead, N. Y.
482,896—Ball-Bearing for Vehicle Wheels. Edward S. Frazier, Aurora, Ill.
482,973—Draft Attachment for Vehicles. Hiram Barber, Chicago, Ill.

Patents Expired September 27, 1909.

483,261—Thill Coupling. John V. Myers, Industry, Ill.
483,440—Thill Coupling. Hamilton Greenland and James C. Carrick, Spivey, Kan.
483,474—Sectional Vehicle Shaft. Wm. J. Pohrer, St. Louis, Mo.

Patents Expired October 4, 1909.

483,531—Vehicle Pole. Louis L. Buffham, Racine, Wis.
483,938—Draft Equalizer. Theodor J. Miland, White, S. D.

The above lists of patents, trade marks and designs of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City.

Digitized by Google

SPECIAL TRADE NEWS FROM MICHIGAN

Newsy Notes by our Correspondent Concerning Well Known Carriage and Automobile Manufacturers in the Wolverine State.

To Build Six Hundred Homes.—The project started by the Buick Co., at Flint, to build 600 new houses near the factory district to accommodate the men who come this month to work at the General Motors Co.'s plant, will be carried out by a $200,000 company now being organized by J. Dallas Dort, of the Durant-Dort Carriage Co.

Can It Legally Do Business in Michigan?—Whether the General Motors Co., a New Jersey corporation, owners of several of the largest automobile plants in Michigan, can legally do business in the State under its present form of organization, is a question that is being investigated by the Attorney-General's department. The Secretary of State has raised the question as to whether the big corporation is entitled to a franchise from the State, and there is a more important point raised as to whether the laws permit holding companies to be organized in Michigan or in other States to own the stock of Michigan corporations. John J. Carton, of Flint, representing the Motors Company, has discussed some of the law points with Deputy Attorney-General Chase and there is to be another conference regarding the matter.

General Motors Company Increases Capital.—Preparatory to the absorption, it is said, of several automobile manufactories, including Michigan concerns, the General Motors Co. has increased its capital stock from $12,500,000 to $60,000,000—raising the common stock from $5,500,000 to $40,000,000 and the preferred from $7,000,000 to $20,000,000. The notice was filed in Trenton, N. J.

Detroit's Latest Automobile Factory.—The Metzger Motor Car Co. is the latest addition to Detroit's huge group of automobile factories. Articles of incorporation for the new company have been filed at Lansing, giving the capital stock as $500,000, of which $300,000 is paid in. Thus is verified the rumor current for some time that Wm. E. Metzger, B. F. Everitt and Wm. Kelly would soon enter the manufacturing field. Metzger is one of the best known automobile manufacturers in the United States; Everitt was president of the E. M. F. Co., and for years a manufacturer of auto parts, and Kelly has been designing and building motor cars for ten years. The company has bought the big factory of the Jacob F. Meier Co., trunk manufacturers and will add new buildings. The output will be a runabout and a five-passenger car, 5,000 altogether to be built during 1910.

Recommended Continuance of Receiver.—The meeting on September 17 of the creditors and stockholders of the Ionia Wagon Co. resulted in the adoption of a report recommending that the receivership be continued for a time and that another meeting be held on October 20. The interests representing $88,000 preferred stock declined to participate in the meeting, but the disposition of the creditors outside of the city seemed to be to aid in the settlement of the difficulties in all possible ways. Creditors representing about $75,000 of the indebtedness were present.

Wagon Company Building Silos.—The Handy Wagon Co., of Bay City, has found a profitable field in the building of silos for farmers in the surrounding territory. The big corn crop meant many dozen in every locality entered.

Doing a Good Country Trade.—Albert Fisher, of 300 Fort Street, Detroit, reports that his carriage-making trade, with the exception of repairing and painting, is very light and not so good as a year ago. His complaint is the same as that of nearly all the carriage-makers of the Queen City of the Straits. The city trade, if one would listen to the dealers, is all "shot to pieces," but some of the more fortunate are still doing a good country trade.

Inventor Dead.—Alma Bedford, aged 75 years, inventor of the Bedford high arch sulky, died at his home in Coldwater the first week in September.

Increased Its Capital.—The Michigan Buggy Co., of Kalamazoo, has increased its capital stock from $300,000 to $500,000, and will manufacture automobiles.

Planning Permanent Auto Exposition at Detroit.—An automobile exposition of great proportions, national in scope and possibly a permanent institution—one that will serve far better than any winter show to demonstrate Detroit's leading place in the auto world—is being planned by automobile manufacturers of the city. Those who attended the preliminary meeting in Mayor Phil Breitmeyer's office were: Messrs. Hawkins, of the Ford Co.; Brownson, of the E. M. F.; Ford, of the Chalmers-Detroit; Drysdale, of the Cadillac; Briscoe, of the Brush; Drake, of the Hupmobile, and Wm. E. Metzger.

Will Double Output Next Year.—A. R. Welch, general manager of the Welch Motor Car Co., of Pontiac, and which was recently acquired by the General Motors Co., says that next year's output of the plant at Pontiac will be 300 cars. This year the plant has manufactured about 150 cars. A lease has been taken of the old Hodges Vehicle Co.'s factory and this will be devoted entirely to the body and finishing departments. The bodies will be made by the Monroe Body Co., which is but a short distance from the Hodges plant.

From Farm to Factory Site.—It is reported that the General Motors Co. has closed an option on the Birney farm in Saginaw and that a large factory to be devoted to the manufacture of auto parts will be erected there.

Won't Enter Licensed Fold.—"So far as coming into the 'licensed' fold is concerned, we shan't do it," said Henry Ford, head of the Ford Motor Co., referring to the ruling of Judge Hough, of the United States Circuit Court for New York City, declaring valid the Selden patent of 1895 to cover all gasoline propelled vehicles. The Selden patent is so comprehensive that if it is declared valid by the highest court every auto with an internal combustion engine will be an infringement. About 30 manufacturers have consented to pay a royalty, or license fee of 1¼ per cent on the selling price of all machines made and sold bearing the Selden patent. They constitute the Association of Licensed Automobile Manufacturers. The so-called unlicensed manufacturers are headed by the Ford Co. George B. Selden and his assignees, of Rochester, N. Y., lay claim to full ownership and control of the basic patents on the gasoline motor attachment to a vehicle for propelling purposes. E. P. Chalfant, assistant to the president of the Packard Motor Car Co., who is one of those in the licensed association, says that undoubtedly the unlicensed manufacturers will find themselves involved for millions of dollars when the case reaches the highest courts.

Detroit's Postmaster Heads New Auto Co.—Another prominent Detroiter has identified himself with the automobile industry. Articles of incorporation of the Warren Motor Car Co. show that Homer Warren, postmaster of Detroit, is the first president of the new concern, which is capitalized at $100,000.

Digitized by Google

The new car will be known as the Warren-Detroit and will be of two models—the light runabout and the touring car. The cars will be placed on the market next season. Following are the other incorporators besides Mr. Warren: C. R. Wilson, of the Wilson Body Co.; Harry N. Snyder, manufacturers' agent for Michigan of the Michelin tires: W. H. Radford, formerly assistant engineer of the Hudson Motor Car Co., and later with the Olds Motor works; R. J. Brennan, of Brennan & Dubois, manufacturers' agents; Henry C. Walters, of Walters & Walters, attorneys, and J. Bayerline, purchasing agent of the Hudson Motor Co., formerly with the Pope-Hartford and Pope-Toledo concerns.

New Motor Plant for Adrian.—The Lion Motor Car Co., capital $350,000, recently was organized at a meeting at the Griswold House, Detroit. The plant will be in Adrian, the city having granted a bonus of $20,000. The officers of the new company are: President, Henry C. Bowen, Adrian; vice-president, Fred Postal, Detroit; secretary, Leslie Robinson, Adrian; treasurer, Wm. Sherison; directors, Thos. E. Newton, A. E. Morey, Wm. Sherison, Henry C. Bowen, Leslie Robinson, Fred Postal and W. J. Burton. The output for next season is expected to be about 2,000 cars.

Sold Beyond Its Capacity.—The Reo automobile concern, in Lansing, according to Secretary E. F. Peer, is already sold beyond its capacity and has a rosy outlook for the year.

TRI-STATE CONVENTION PROGRAM.

The annual convention of the Tri-State Vehicle and Implement Dealers' Association to be held at Cincinnati, O., October 25, 26, 27 and 28, is as follows:

Monday, October 25, will be given over to conferences with manufacturers regarding unsettled complaints.

Tuesday, October 26, 9.30 a. m.—Convention session will be held in parlors at Armory. This will be executive and admittance limited strictly to members in good standing.

Address of President T. H. Elder, Kenton, O.

Reports of secretary and treasurer.

Appointment of committees.

Report of delegate to National Fertilizer Convention.

Report of committee to revise constitution.

Address by representative of National Federation of Dealers' Associations.

Discussion of complaints.

Suggestion box.

Wednesday, October 27.—Convention session will be held downtown—Exhibit Hall being closed until noon. Manufacturers, jobbers, dealers and travelers will join in this meeting at 9.30 a. m.

The National Federation, by representative of this organization.

The Reciprocal Adjustment Bureau, its aims and methods, by the secretary.

Some desired improvements in dealers and their manner of doing business, by the manufacturers.

Changes in manufacturers' policies that will benefit the dealers, by the dealers.

Some suggestions for improvement in both these factors, as born of our experience, by the travelers.

General discussion of above topics. Leaders in these questions will be duly announced.

Thursday, October 28.—Executive session in parlors of the Armory, 9.30 a. m.

Reports of Auditing, Grievance and Complaints, and Resolutions Committees.

Report of delegates to National Federation convention.

Election of officers.

New and unfinished business.

Suggestion box.

RECENTLY GRANTED PATENTS OF INTEREST TO THE CARRIAGE INDUSTRY.

928,240—Speed Gearing. J. S. Barnes, assignor to W. F. & John Barnes Company, Rockford, Ill.

928,894—Variable Speed Gearing. J. S. Barnes, assignor to W. F. & John Barnes Company, Rockford, Ill.

928,731—Vehicle Tire. M. Behrer, New York, N. Y.

928,842—Vehicle Spring. E. Bollbach, New York, and A. Waindzioch, Brooklyn, N. Y.

928,584—Foldable Vehicle Top. W. S. Butler, Boothwyn, Pa.

928,739—Friction Drive Mechanism for Automobiles. A. B. Cole, St. Louis, Mo.

928,587—Wagon Jack. A. A. Coon, Hutsonville, Ill.

928,503—Drop Wagon Box. A. T. Cyr, Hugo, Minn.

12,993—Reissue, Motor for Automobiles. M. Eastman and W. Eastman, Roslyn, N. Y.

928,433—Pneumatic Tire Armor. C. E. Evans, Council Bluffs, Iowa.

928,370—Whip Socket. J. C. Feickert, San Francisco, Cal.

928,601—Vehicle Cushion Wheel. F. Groff, St. Johnsville, N. Y.

928,753—Dumping Wagon. G. M. Head, St. Louis, Mo.

928,519—Method of and Means for Repairing Axles. A. F. Hunt, Santa Monica, Cal.

928,520—Anti-vibration Device for Vehicles of any kind. G. Huysmans, Brussels, Belgium.

928,868—Non-Skid Tire. E. Kempshall, assignor to Kempshall Tyre Company of Europe, Limited, London, England.

928,611—Vehicle Tire. W. A. Koneman, Cudahy, Wis.

928,264—Tire Setter. H. M. Lourie, J. W. Devero and J. C. Ford, assignors to National Machine Company, Keokuk, Iowa.

928,679—Variable Speed Mechanism. A. G. Mather, Ottawa, Ont., Canada.

928,790—Automobile Fifth Wheel. E. A. Oliver, Richland, Mo.

928,797—Hose Connection for Wheel Tires, etc. E. J. Rohrbacher, Blaine, Wash.

928,705—Changeable Speed Gearing. W. Scott, Sheridan, Wyo.

928,553—Signal for Pneumatic Tires. S. Silverman and J. E. Trahan, Watertown, N. Y.

928,708—Wagon Pole. W. H. Spillman and E. M. Barnes, St Joseph, Mich.

928,564—Vehicle. B. Tippmann, Columbus, O.

928,411—Valve for Pneumatic Tires. G. de Vigne, Cheltenham, England.

928,413—Wheel Hub. J. T. Watters, Chicago, Ill.

928,568—Variable Speed Gearing. W. A. Widmer, Danbury, Conn.

928,486—Variable Speed Gear. H. E. Williams, Portsmouth, England.

929,373—Dust Guard. W. N. Bailey, Pullman, Ill.

929,189—Axle Box and Washer. M. E. Boddy, assignor of one-half to N. P. Fraser, Carsonville, Mich.

929,382—Dumping Vehicle. P. Brand and C. G. Glasrud, Sheyenne, N. D.

929,193—Cover for Pneumatic and Like Tires. H. W. Cave-Browne-Cave, London, England.

929,122—Tire. S. S. Childs, Bernardsville, N. J.

929,402—Pole Tip. J. W. Deam, Geary, Okla.

929,197—Headlight for Vehicles. A. E. Dobbs, Winona, Minn.

929,570—Spring Wheel. C. L. Driefer, San Francisco, Cal.

929,571—Valve for Pneumatic Tires. E. Dubied, assignor to E. Dubied & Cie, Couvet, Switzerland.

929,572—Spring Wheel. W. Eckert, Northwood, Ia.

929,203—Tire Shield. J. H. Fletcher, Seattle, Wah.

929,641—Latch for the Closing of End Gates. G. H. Fox, assignor of one-half to C. Fox, Ligonier, Pa.

928,957—Steering Mechanism. L. Gabetti, Hoboken, N. J.

929,208—Wheel. L. J. Goodspeed, Rockford, Ill.

929,303—Axle Lubricator and Dust Excluder. H. P. Hansen, Lind, Wash.

929,425—Variable Speed Gearing. J. Heim, Winnipeg, Manitoba.

929,426—Ball Bearing. F. Henzelmann, Chicago, Ill.

929,472—Anti-friction Bearing. F. Henzelmann, Chicago, Ill.

929,437—Vehicle Wheel. W. L. Howard, Trenton, N. J.

928,986—Shield for Pneumatic Tires. F. W. Kruger, Little Cedar, Ia.

929,605—Safety Steering Attachment for Automobiles. H. P. Larouette, assignor of one-eighth to G. L. Barker, one-eighth to A. L. Wood and one-eighth to A. J. Moan, San Jose, Cal.

929,315—Socket for Wagon Stakes. H. W. Leverentz, Chicago, Ill.

929,234—Wheel. F. R. Mather, Whitesville, N. Y.

929,617—Rubber Tire Setter. C. A. Maynard, assignor to Maynard Rubber Corporation, Springfield, Mass.

929,159—Automobile Buffer. A. L. McGregor, Duluth, Minn.

929,620—Tire. G. E. Miller, Newton Center, and C. M. Wheaton, Newtonville, Mass.; said Wheaton assignor to said Miller.

Digitized by Google

929,155—Buggy Top Support. J. C. Morton, assignor of one-half to O. P. Cassity, Eldorado Springs, Mo.
929,237—Vehicle Top Shifting Rail. A. J. Murray, assignor to Cortland Carriage Goods Company, Cortland, N. Y.
929,020—Reach Attachment for Vehicles. J. Rodgers, assignor of one-half to P. Johnson, Gulliver, Mich.
929,632—Tire Tread. J. R. Sanford and J. G. Doughty, assignors to Flexible Rubber Goods Company, Winsted, Conn.
929,331—Storm Front for Vehicles. G. W. Scott, Troy, O.
930,118—Swingletree. C. V. Anthenat, Sheridan, Ill.
930,029—Gear Changing Mechanism for Automobiles. F. Beemer, assignor to S. S. Eveland, Philadelphia, Pa.
930,269—Street Sweeper. S. Conrath, Olean, N. Y.
930,055—Sled Brake. E. G. Doland, Starksboro, Vt.
930061—Vehicle Seat. E. H. Faile, New York, N. Y.
929,931—Locking Whip Socket. C. H. Frederick, Sandusky, O.
930,072—Anti-rattling Device. J. J. Halladay, Broklyn, N. Y.
930,286—Thill Coupling. V. B. Henby and H. Fintel, Jr., Hardy, Neb.
930,187—Thill Support, W. Judd, assignor of one-third to J. Long and one-third to W. B. Rigby, Eureka, Cal.
929,957—Spoke Setter. A. R. Kunzman, Volga, Ill.
929,794—Motor Vehicle. J. K. Sharpe, Jr., and C. N. Leonard, Indianapolis, Ind.; said Leonard assignor to said Sharpe.
930,246—Thill Coupling. H. E. Vosburgh, Norristown, assignor to S. D. Rhoades, Phoenixville, and J. J. Quay, Norristown, Pa.
929,806—Raising and Lowering Attachment for Buggy Tops. W. P. Warren, Sheridan, Ill.
930,111—Vehicle Wheel. J. C. Willmon, Los Angeles, Cal.
930,641—Attachment for Buggy Tops. T. A. Brethouwer, Prairie View, Kan.
930,531—Chain Drive Adjustment and Casing for Automobiles. L. S. Chadwick, assignor to Chadwick Engineering Works, Philadelphia, Pa.
930,352—Buggy Top Support. J. P. Cline, Charity, Mo.
930,355—Vehicle Wheel. Z. A. Curtis, Channing, Texas.
930,362—Steering Wheel for Automobiles. J. B. Dumais, assignor of one-fourth to E. J. Mercil and one-fourth to B. Mercil, Chicago, Ill.
930,539—Automatic Shaft Lifting and Supporting Device. J. D. Ellison, Rives, Tenn.
930,366—Locking Whip Socket. F. J. Erickson, Jackson, Minn.
930,467—Shock Absorber. P. M. Freer, Barberton, assignor of one-fourth to W. W. Pope and one-fourth to C. W. Hawkins, Akron, O.
930,468—Shock Absorber. P. M. Freer, Lansing, Mich., assignor of one-fourth to W. W. Pope and one-fourth to C. W. Hawkins, Akron, O.
930,371—Vehicle Brake. F. Gettelman, Milwaukee, Wis.
931,011—Muffler Cutout for Automobiles. C. G. Hawley and E. K. Baker, Chicago, Ill.
930,669—Lamp Working Apparatus for Vehicles. W. F. Hutchinson, Nyack, assignor of one-half to C. A. Tatum, New York, N. Y.
930,670—Lamp Working Apparatus. W. F. Hutchinson, Nyack, assignor of one-half to C. A. Tatum, New York, N. Y.
930,761—Registering Device for Passenger Conveying Vehicles. E. V. Jacka, New York, N. Y.
930,769—Vehicle Wheel. W. E. Killen and E. C. Phillips, Chicago, Ill.
930,551—Automobile Chassis. R. M. Lloyd, Oyster Bay, N. Y.
930,557—Spring Wheel. R. McFarland, Tatesville, Pa.
930,677—Rebound Checking Device for Automobiles. F. Mesinger, New York, N. Y.
930,560—Wind Shield for Automobiles. F. Parizek, assignor to Universal Wind Shield Company, Chicago, Ill.
930,498—Shock Absorber. G. E. Shippey, Pittsfield, Mass.
930,502—Machine for Attaching Tires to Wheels. H. L. Stoup, Ypsilanti, Mich.
930,577—Whip Socket. J. Van Blarcom, Paterson, N. J.
930,585—End Gate Fastener. A. F. Williams, Victor, Colo.
930,716—Carriage. F. W. Zingsheim, Ferguson, assignor to Moon Brothers Carriage Company, St. Louis, Mo.
931,671—Shock Absorber. G. Bank, Buffalo, N. Y.
931,674—Tire Cover and Fastening therefor. G. W. Brown, Junction City, Kan.
931,563—Manufacturing Elastic Tires for Wheels. T. L. Carbone, Charlottenburg, Germany.
931,684—Automobile Lock. H. F. Crim and W. C. Loy, Rochester, Ind.
931,283—Wheel Hub. G. H. DuBois, San Martin, Cal.
931,284—Anti-skidding Device for Tires. T. I. Duffy, assignor of one-half to A. V. Martin and one-half to G. J. Adam, Chicago, Ill.
931,288—Change Speed Gear. P. Evans, Philadelphia, Pa.
931,289—Change Speed Gear. P. Evans, Philadelphia, Pa.
931,403—Automobile Wheel. J. A. Fleming, Danville, Ill.
931,048—Spring Wheel. L. Flum, Chicago, Ill.
931,056—Pneumatic Tire Plug, J. Glanz, Hartford, Conn.
931,601—Foot Board for Vehicles. J. Hage, Plankinton, S. D.
931,615—Vehicle Wheel. T. B. Jeffery, Kenosha, Wis.
931,430—Automatic Brake for Vehicles. F. D. Kaser, Silverton, Ore.
931,621—Automatic Vehicle Brake. G. R. Kelly, Chrystal, Pa.
931,207—Making Casings for Pneumatic Vehicle Tires. J. O. King, assignor to King Leather Tire Co., Milwaukee, Wis.
931,437—Whip Socket. J. H. Larson, Troutdale, Ore.
931,325—Tire Upsetter. J. H. Macdonald, Beverly, Mass.
931,451—Rear Axle for Automobiles. F. C. Miller, Cincinnati, O.
931,214—Vehicle Wheel. B. C. Oblinger, assignor of one-half to A. H. C. Beatty, Independence, Mo.
931,648—Inner Tube for Pneumatic Tires. H. K. Raymond, assignor to B. F. Goodrich Company, Akron, O.
931,491—Wagon Brake. W. L. Roper, Maplesville, assignor of one-half to N. J. Rogers, Tuscaloosa, Ala.
931,505—Vehicle Wheel. C. L. Shaw, Casa Grande, Ariz.
931,160—Wheelwright's Tool. F. M. Sturgis, Shelbyville, Ill.
931,241—Spring Wheel. W. H. Wildrick, Phillipsburg, N. J.

Copies of above patents may be obtained for fifteen cents each by addressing John A. Saul, solicitor of patents, Fendall Building, Washington, D. C.

MAKE GOOD.

There always will be those who will make good just as there always will be winners. There's no hope for the old fellows who have got in the rut, but every young man ought to be impressed with the idea that he can if he will. Determination—the kind that never gets tired—does the work. In this regard an exchange says:

Nothing is so much on the mind of the average business man as the question as to whether he is "making good." From the man highest up down to the man at the foot of the ladder, it is the same old grind. Keep plugging, or fall behind is the universal law.

Moreover, no matter what a man's business, and no matter how much or how little money he is making, each man believes he has the toughest job on earth, and he wishes he only had Bill Jones' job—then how happy he would be.

But he wouldn't. He would be wishing he had Sam Brown's job then. Think of what a cinch he's got; $10,000 a year, a fine house, an automobile and all the flummeries. But, bless you, children! Sam Brown is in up to his neck, and wishes he was in Tom Bigwald's shoes, and so it goes.

One of the arts of making good consists in squeezing all of the juice out of the lemon you've got.

If you are dissatisfied, resign, quit, vamoose! Go get another job. But first go off by yourself and think things over. Are you doing your best where you are? Can't you do more than you are doing? Have you done everything you ought to have done. If not, take a fresh grip on yourself and get busy. Stick to what you know.

In fact, another of the arts of making good consists not only in being satisfied with what you've got, but also in being dissatisfied with the way you're taking advantage of your opportunities. Do more than you are paid to do. Fit yourself for bigger things. Be ready to step into the shoes of the man higher up, and first thing you know you'll be occupying his berth. Success is for the man who makes success come to pass. The only luck in this world comes as the result of preparation, foresight and devilish hard work. Stop whining and get busy.

WILL ERECT A NEW WAREHOUSE.

The Defiance Machine Works, manufacturers of woodworking machinery, Defiance, O., are planning the erection of a two-story brick warehouse, to be of fireproof construction and to contain a suitable hydraulic elevator to be used for the storing of finished machines. The building will be 66 by 132 feet, of modern design throughout.

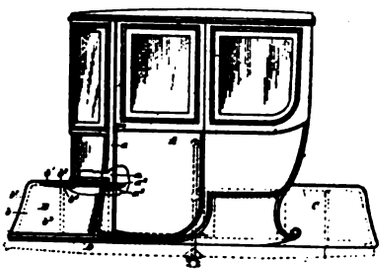
Envy is the great foil to prosperity. The man who envies no one knows least of his neighbor's business.

Digitized by Google

RECENTLY GRANTED PATENTS OF INTEREST TO THE CARRIAGE INDUSTRY.

Vehicle Body. Edward H. Remde, Cleveland, O., assignor to The Baker Motor Vehicle Company, Cleveland, O. No. 932,058. Patented August 24, 1909.

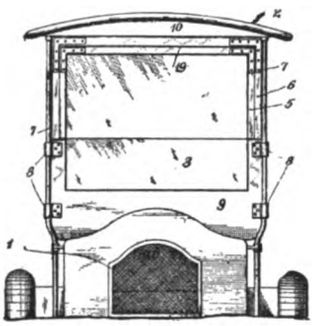
A vehicle body comprising an inclosing portion and a front battery case extending forwardly beyond the inclosing portion



including a part extending forwardly of the front pillars and partially over the case, which extends into the interior of the inclosing portion a distance substantially equal to the depth of the forwardly extending portion.

Automobile Wind Shield. Henry F. Holbrook, New York, N. Y., assignor to Holbrook-Singer Company, New York, N. Y. No. 932,126. Patented August 24, 1909.

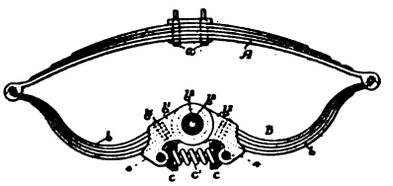
In automobile shields a support to be secured to a top member and provided with locking means to hold the support in operative substantially vertical position on an automobile front and to hold the support in raised inoperative position in connection with the top of the automobile, adjusting bars mounted on support, so as to be substantially parallel thereto, a shield frame



hinged at its upper portion to support and carrying a transparent shield, arms pivotally connected to shield frame and having tightening members co-operating with adjusting bars to adjustably hold shield when swung forward beyond the plane of the support, the arms being transverse with respect to adjusting bars when shield is swung into extreme forward position and means to hold frame in alinement with support.

Vehicle Spring. Frederick Berger, Philadelphia, Pa. No. 932,241. Patented August 24, 1909.

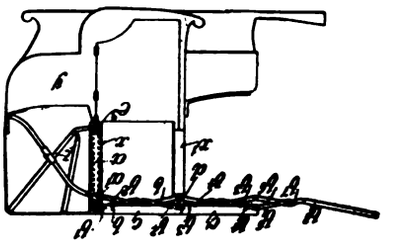
The combination in a spring of two members of which one consists of two elements respectively pivoted to the ends of the



first member and curved so that their adjacent ends extend upwardly toward the middle of said member, means for pivoting together adjacent ends, with a spring extending between portions of the adjacent ends of said two spring elements and substantially on the level of their lowermost parts.

Road Vehicle. John Hopper, Fulham, England. No. 932,551. Patented August 31, 1909.

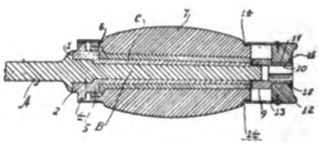
In a landaulet the combination with the usual folding hood and top of vertical bars by the rear upright pillars, of side frames constructed of a series of links arranged to operate as lazy-tongs, one of the members of the rear links of each frame being pivoted at its rear end to one of the bars and the other members of the links being pivoted at their rear ends, to sockets



adapted to slide on the bars, sprocket chains the ends of which are fixed to sockets, sprocket wheels for chains carried at the top and bottom of rear upright pillars, a transverse shaft connecting the top sprocket wheels of each side together, and means for rotating one of the lower sprocket wheels to cause the sockets to slide on bars.

Vehicle Axle. Charles T. Cullison, Worthington, Ind. No. 933,293. Patented September 7, 1909.

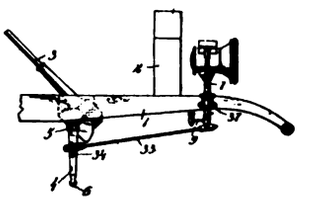
The combination with an axle having a spindle, of a hub mounted on the axle, a nut received on the spindle for retaining



the hub in position, a cap loosely mounted on the nut for preventing foreign matter from coming in contact with the axle, and means connected to the nut for retaining the cap in position.

Lamp Attachment for Vehicles. George S. Sherman, Great Neck, N. Y. No. 933,350. Patented September 7, 1909.

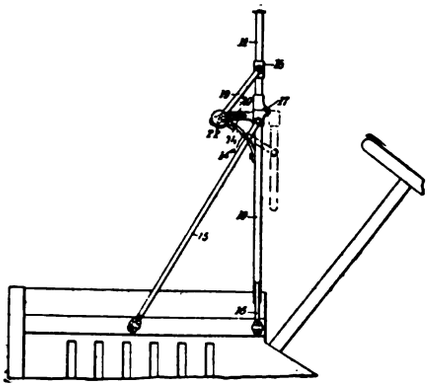
A vehicle steering gear, lamp carrying members, lamp swinging members, a rod connecting the lamp swinging members, a rod connecting the steering gear with one lamp swinging mem-



ber and means for locking each lamp swinging member to or releasing it from its corresponding lamp carrying member at pleasure.

Wind Shield. James H. Sprague, Norwalk, O. No. 933,496. Patented September 7, 1909.

A wind shield, comprising a lower stationary section, a bracket



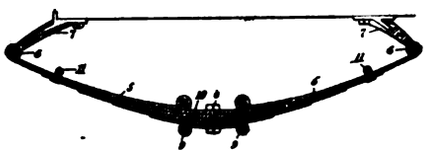
extending substantially horizontally from lower section adjacent the upper edge and having a slot extending longitudinally

Digitized by Google

thereof, an upper section hinged to lower section and movable to a position parallel to the lower section and upon the side opposite to bracket, a link having one end pivoted to the upper section, a bolt extending through the opposite end of link at right angles and through slot and constituting a pivotal and sliding connection between the link and bracket, and a supporting brace for the lower section independent of the bracket.

Leaf Spring. William J. Harrison, West Derby, Vt., asignor of one-half to George C. Adams, West Derby, Vt. No. 933,441. Patented September 7, 1909.

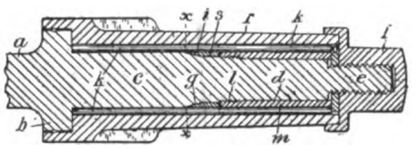
The combination of a vehicle frame, and a leaf spring con-



tractible and extensible in length under pressure, having its opposite ends secured to fixed points of the frame.

Roller Bearing. Lincoln J. Aldridge, Plattsburg, N. Y., assignor to Aldridge Roller Bearing Manufacturing Company. No. 933,735. Patented September 14, 1909.

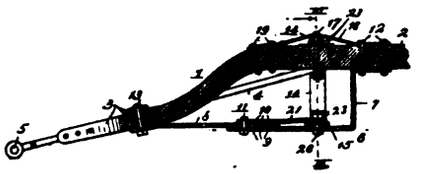
A roller bearing, the combination, with an axle having the larger portion and reduced portion with tapering junction or



neck, and a casing and rolls fitted to the axle, of an annular roll-retainer having flaring bore fitted movably to the tapering neck and a sleeve fitted to the reduced portion of the axle to hold such roll retainer in place.

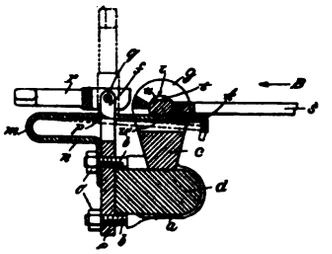
Vehicle Tongue. Milton R. Lunn, Adrian, Mo., assignor, by direct and mesne assignments, to Otto Atkinson and J. B. Atkinson, Adrian, Mo. No. 934,080. Patented September 14, 1909.

The combination with a vehicle tongue, of an arched double-tree section pivotally secured to tongue and having its ends on a plane considerably lower than the upper portion, a straight double-tree section arranged beneath the arched section, a



bracket secured to the tongue to support the straight double-tree section which latter is pivotally secured to the bracket, the bracket being extensible to fit tongues of different lengths and to bring the pivotal point of the straight section in line with the pivotal point of the arched section, and swingle-trees pivotally mounted between the ends of the double-tree sections.

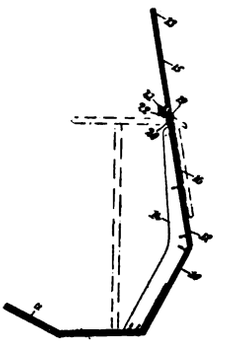
Vehicle Coupling. August Weisler, Perryville, Mo., assignor of one-half to Edward Robb, Perryville, Mo. No. 934,250. Patented September 14, 1909.



The combination with a pole end having laterally extending studs and formed with a reduced portion there-between, of a pole bracket having ears, one of which is formed with an eye and the other with a recess through which the reduced portion may be passed, one of the studs being adapted to fit in the eye and the other in the recess; a yielding device which extends between the ears and bears against the reduced portion; and means for moving the yielding device to release pole end.

Wind Shield. Ernest Flag, New York, N. Y. No. 934,152. Patented September 14, 1909.

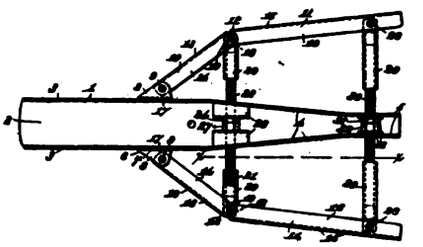
A wind shield for vehicles having a lower section extending transversely of the vehicle and inclined rearwardly, and an upper section journaled upon first section and movable to a position in alinement therewith or to a position adjacent and par-



allel, the upper edge of the lower section and the adjacent edge of the upper section lying in horizontal planes when the upper section is in either of its two positions and the journal connecting the sections being adjacent the front or upper surface of the shield.

Tongue Hounds. Paul A. Gehring, Kenosha, Wis., assignor of one-third to John C. Picker and one-third to Louis F. Picker, Kenosha, Wis. No. 934,518. Patented September 21, 1909.

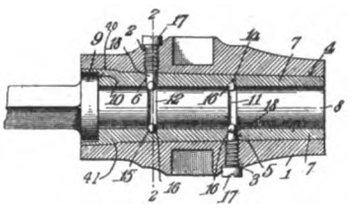
The tongue socket in combination with tongue hounds, hinged links connecting the socket and hounds, means for adjusting the



forward ends of hounds toward or from each other and means for similarly adjusting the rear ends of hounds, and means for adjusting hounds unsymmetrically with relation to socket.

Hub Attaching Device. Rip G. Roulstone, McKenzie, Tenn. No. 935,061. Patented September 29, 1909.

A hub having a tapering axial bore with spindle sleeve arranged to be inserted; the hub being provided with radial, oppositely disposed, threaded apertures spaced apart; the spindle sleeve be-



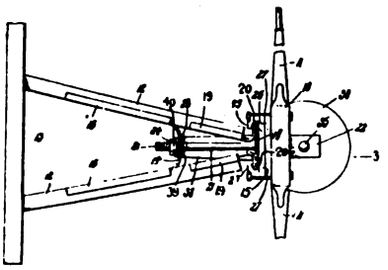
ing provided with unthreaded apertures and arranged to be brought into alinement; the spindle sleeve being provided with a shoulder adjacent its inner end to engage the enlarged portion of the axial bore of the hub to aline the apertures of the sleeve with those of the hub; the sleeve being provided in its inner face with circumscribing grooves intersecting the apertures in the sleeve; the bore of the sleeve being enlarged at its inner end to form a shoulder; a spindle arranged to be inserted into the sleeve and provided with circumscribing grooves arranged to

Digitized by Google

be brought into alinement with the grooves in the sleeve; the spindle having its outer end flush with the outer ends of the sleeve and the hub and being provided at its inner end with a collar arranged to be housed within the contour of the sleeve in the enlarged portion of the bore thereof and to abut against the shoulder formed by said enlarged portion, to aline the grooves of the spindle with the grooves of the sleeve; balls located in the alined grooves of the spindle and the sleeve; members headed to engage the outer surface of the hub and threaded to engage the apertures in the hub; the members terminating in smooth, reduced ends to register in the apertures in the sleeve, the difference in the diameter of the portions of the members determining a shoulder to engage the outer surface of the sleeve; the inner faces of the reduced ends being recessed to conform to the grooves in the sleeve.

Vehicle Coupling. Joseph R. White, Scroggins, Tex. No. 935,134. Patented September 29, 1909.

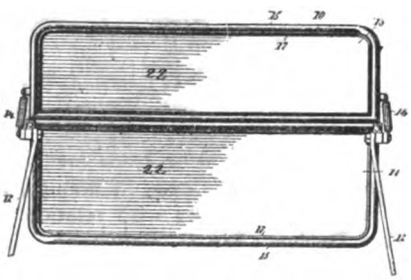
In coupling in combination with the hounds and front bolster of a vehicle, of front and rear bearings connecting and bracing



the hounds, a coupling bolt non-rotatably connected with the bolster and extended through the bearings, and a swivel connection between the bolster and front bearing and comprising a member which is attached to the bolster and in which a portion of the front bearing works.

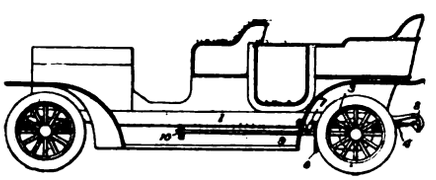
Wind Screen. Edwin K. Conover, Paterson, N. J., assignor, by mesne assignments, to C. A. Mezger, incorporated, Brooklyn, N. Y. No. 935,190. Patented September 29, 1909.

A wind screen for motor vehicles having an inclosing frame formed with a groove along its inner side, which has its outer or



entrance portion contracted relatively to the inner base portion of the groove, a resilient metal retaining strip U-shape in cross section sprung into groove and having return bent side portions, a glass shield plate inclosed by frame and retaining strip and having its edges received between the return bent sides of the retaining strip and a cushion seated in the retaining strip and engaged by the edge of the shield plate.

Motor Vehicle. Allen Loomis, Detroit, Mich., assignor to

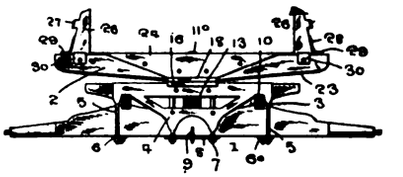


Packard Motor Car Company, Detroit, Mich. No. 935,211. Patented September 29, 1909.

A motor vehicle in combination with the frame, the rear axle casing and the torsion rod rigidly connected with the rear axle casing and connected at its forward end with the frame, of springs connected to frame and rigidly secured between their ends to rear axle casing, the portions of springs rearward of casing being adapted to flex more freely than the portions forward.

Wagon. John W. Smith, Kernville, Cal. No. 935,277. Patented September 29, 1909.

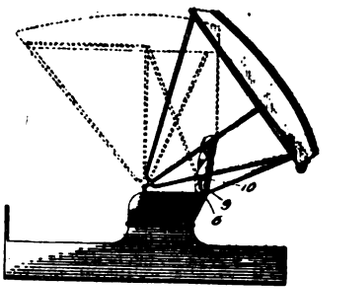
A device including a combined clip and truss adapted to embrace the hounds and axle of a vehicle and having bolt-like ex-



tensions, also ear extensions secured to the hounds, coupling plates applied to the under side of axle and receiving bolt-like extensions and means for securing bolt-like extensions to coupling plates.

Support for Carriage Tops. Ellsworth Jordalen, Stoughton, Wis. No. 935,369. Patented September 29, 1909.

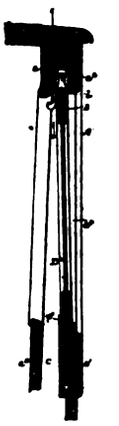
A support for carriage top, comprising a bar provided with a rigid depending arm at each end, the arms having holes in their



lower ends to fit over a railbolt, and supporting the bar in raised position at a distance above the bolt, a cushion block resting on bar, and an attaching bolt between the bar and the block, having its head embedded in the block.

Vehicle Sash Fastener. Ernest R. Mitchell, Philadelphia, Pa. No. 935,389. Patented September 29, 1909.

The combination of a window frame of a vehicle, a sash mounted therein, the upper rail of the frame being recessed to receive the upper edge of the sash, the upper edge of the sash



being rounded, a sash fastener mounted in the recess and having a lever arm extending below the upper rail and exposed on the interior of the vehicle, a grooved arm carried by the lever and adapted to bear upon the rounded upper surface of the sash, a spring for retaining the arm in position, preventing the lifting of the sash and holding the sash against lateral movement.

Detroit Bending Co. Incorporates.—The Detroit Bending Co. has filed articles of incorporation with the Secretary of State at Lansing, giving its capital stock as $10,000.

Digitized by Google

AMONG THE TIRE MAKERS

The B. F. Goodrich Company, of New York, has just finished, in New York City, one of the most admirably equipped buildings for the handling of their rubber products, especially tires, that there is in America.

The structure is a notable addition to the business buildings of the neighborhood where it stands, Broadway next to the corner of 57th Street The building is numbered 1780-1782 on Broadway, and has an L of almost equal size at 225-227 West 57th Street. There are twelve floors and a basement.. The latter is used entirely for the storage of automobile tires. The rear of the ground or street floor is a receiving and shipping room. The front is a large salesroom, which has been very effectively done in mahogany. Green marble is also an element of the finish. It has been chosen for the counter tops and the heavy pillars that support the ceiling.

On the second floor, looking out on Broadway, is the reception room—a considerate provision for the comfort of customers who may be awaiting attention. There are large easy chairs, smoking tables and convenient writing desks. The finish here is fumed oak. A rear room is reserved for the solid tire,

The new Goodrich Building.

storage and repairing. Here is a complete wheelwright and forge equipment, so that all tire fitting can be done, as well as the repair work.

The eighth floor has been given over mostly to offices for the manager and salesmen. The rear is a store room for the stock of mechanical rubber goods. Above, on the ninth floor, are the general offices for the clerks.

The next floor, for the company's use, is the eleventh—a large stock room for specialties, such as druggists', surgeons' and stationers' rubber sundries.

On the top, or twelfth, floor are the most complete automobile tire repair facilities in the United States.

Throughout this building, seemingly, no mechanical device for the ready handling of the heavy stock has been omitted. There are special automobile elevators. One of these has the convenience of a turntable floor. There is also a general freight lift. In addition, two passenger elevators are provided, and an electric dummy waiter, adjusted to stop automatically at any floor.

The exterior of the building is white and green marble, with bronze capitols and decorations for the first two stories. Above this the material is pressed brick with white stone trimmings.

The combination is effective and distinguishes the building as a conspicuous achievement by the B. F. Goodrich Company, of New York.

Mr. W. H. Yule is general manager, with Mr. H. C. Miller in charge of the automobile tire department.

Some radical changes have been decided upon by the directors of the Swinehart Clincher Tire and Rubber Co. since its reorganization. Two new factory buildings, one 40x100 feet, one story, and the other 60x125 feet, and three stories, will be added to the plant. The smaller building will contain the mill room and a part of the solid tire department, and the larger building will be used for the new branch of manufacture into which the company will launch, pneumatic tires, the type of which has not been given out. W. W. Wuchter, general manager, said that the tire will have features to distinguish it from the standard types. Clinchers and quick detachable in all sizes will be made. It is announced that branches will be established in Boston, Philadelphia and Buffalo, in addition to the present branches at New York and Chicago, and selling agencies will be started in all the trade centers. J. A. Swinehart, president of the company, spent September in Porto Rico on company business and at the end of the month sailed for Europe, where he will spend the next two years in looking after the company's foreign interests.

The Coesir Tire & Rim Company has been organized at Indianapolis, with a capitalization of $100,000 for the purpose of manufacturing a clincher tire invented by John L. Coesir.

The Falls Rubber Company, whose newly arranged plant at Cuyahoga Falls is now in operation, will soon, besides their mechanical goods, turn out pneumatic automobile tires and will make all sizes of clincher and mechanical fastening tires.

The Akron Pneumatic Tire Making Machine Company has been organized to make and sell a tiremaking machine, with capital stock of $10,000. The directors are C. A. Ley, president; J. W. Meeker, secretary and general manager; M. B. Kuhlke, vice-president; E. T. Williams and A. C. Squires.

The B. F. Goodrich Co. purchased early in September a piece of land on South Main Street, at the southwest corner of their plant, in Akron, O., which now makes it the owner of all the land facing on Main Street for several hundred yards. Mr. Shaw, general manager of the Goodrich works, says that the land will be used for a new building.

The annual convention of the salesmen and branch managers of the Firestone Company was held in Akron the second week of September. Seventy men were present and the convention closed September 11, with a banquet at the Portage Country Club.

Imports of rubber tires for vehicles of all kinds are reported by the customs service in Canada in more detail than in other countries. The following official statements of value are for fiscal years ending March 31:

	1907-08	1908-09
Great Britain	$10,326	$10,732
France	931	1,484
Germany	1,287	564
United States	81,555	96,795
Total	$94,099	$109,575

Imports of automobiles and other motor vehicles during the

Digitized by Google

past fiscal year amounted to 533, valued at $585,097, of which the United States contributed 469, worth $474,757.

The Hartford (Conn.) Rubber Works Co. has issued a correction of the statement that it was the purchaser recently of the Pope Tube Works, from the United States Steel Corporation. The tube plant, which was built under the directions of the late Colonel Albert A. Pope and which was acquired by the Steel Corporation several years ago, has been idle for a considerable period, although it has been kept in excellent repair. The works have been purchased, however, by the Pope Manufacturing Co.

The automobile tire manufacturers of Akron, O., announced a second uniform rise in the prices of automobile tires on September 23. The increase amounts to about 15 per cent. and was made to keep pace with the rising crude rubber market.

The Star Rubber Co., of Akron, has increased its capital stock from $100,000 to $150,000. An additional building, three stories and 50x100 feet, is being erected to be devoted principally to making pneumatic automobile tires and inner tubes.

The annual conference of salesmen of The B. F. Goodrich Co. was held on September 23 and 24 in Akron. All branch managers and traveling salesmen, to the number of between 50 and 60, were present. Mr. H. E. Raymond presided. A. E. Lumsden, manager of the London branch and the company's representative in Europe, was in attendance.

DEALERS' CONVENTIONS.

Thus far the following convention dates have been selected by retail implement dealers' associations:

Tri-State Vehicle and Implement Dealers' Association, at Cincinnati, O., October 26, 27 and 28.

Michigan Retail Implement and Vehicle Dealers' Association, at Flint, Mich., November 9, 10 and 11.

Virginia and North Carolina Retail Implement, Machinery and Vehicle Dealers' Association, at Petersburg, Va., November 17 and 18.

Iowa Implement and Vehicle Dealers' Association, at Des Moines, Ia., November 30, December 1, 2 and 3.

Illinois Retail Implement and Vehicle Dealers' Association, at Peoria, Ill., December 7, 8 and 9.

Retail Implement Dealers' Association of South Dakota, Southwestern Minnesota and Northwestern Iowa, at Sioux Falls, S. Dak., December 7, 8 and 9.

Idaho Retail Hardware and Implement Dealers' Association, at Boise, Ida., December 10 and 11.

Wisconsin Retail Implement and Vehicle Dealers' Association, at La Crosse, Wis., Oecember 14, 15 and 16.

Minnesota Retail Implement Dealers' Association, at Minneapolis, Minn., January 4, 5 and 6, 1910.

Western Retail Implement and Vehicle Dealers' Association, at Kansas City, Mo., January 11, 12 and 13, 1910.

Inland Empire Implement and Hardware Association, at Spokane, Wash., January 18, 19 and 20, 1910.

Southern Illinois Retail Implement and Vehicle Dealers' Association, at East St. Louis, Ill., January 19 and 20, 1910.

Oklahoma Retail Hardware and Implement Dealers' Association, at Oklahoma City, February 8, 9 and 10, 1910.

ANNUAL MEETING OF C. M. A. A.

The annual meeting of the Carriage Manufacturers' Association of America will be held at Washington, D. C., October 20. Washington was selected as the place for holding the meeting because the Carriage Builders' National Association is to convene there for a three-day session October 19, and many of the carriage builders are members of both organizations. Officers for the ensuing year will be elected and the year's work reviewed.

PERSONAL MENTION.

Charles A. Farrow, who has been connected with the Westcott Carriage Company, at Richmond, Ind., for several years, has accepted a position as assistant superintendent of the painting department of the Pierce-Arrow Automobile works of Buffalo, N. Y.

Mr. Wade B. Roddey, who for the past number of years has been connected with the Rock Hill (N. C.) Buggy Cmpany as secretary and treasurer, has resigned his position and accepted one as secretary of the Wymojo Mills of that city. He is succeeded in the buggy company by J. M. Cochran, who has been promoted from the position of traveling man.

H. E. Miles, of Racine, Wis., has resigned the chairmanship of the Tariff Committee of the National Association of Manufacturers. Upon his request D. A. Tompkins, of Charlotte, N. C., has been appointed to succeed him. Mr. Miles has resigned for the purpose of devoting more time to the work of the committee of 100, which was appointed at the Indianapolis convention last winter to work for a permanent tariff commission.

H. E. Lewis, formerly with the McFarlan Carriage Company in Kansas City territory, has been engaged by the Jones Auto Car Company, of Wichita, as traveling salesman in parts of Kansas and Oklahoma.

T. C. Lund has moved from Stoughton, Wis., to St. Paul, Minn., where he has become interested in the Schurmeier Wagon Co. Mr. Lund will have charge of the manufacturing part of the business with headquarters at St. Paul.

L. E. Posther has resigned his position as superintendent of the Mier Carriage & Buggy Co., at Ligonier, Ind., to accept a position with the Rex Buggy Co., at Connersville, Ind.

S. H. Smith, vice-president of the Hughes Buggy Company, at Lynchburg, Va., has, it is said, sold out his interest in the Taylor-Cannady Buggy Company, of Oxford, N. C., and taken up active work as the sales manager of the Hughes Buggy Co. factory.

John R. McLoughlin, well-known carriage-maker of Barrington, R. I., suffered minor injuries in an automobile accident on September 5.

Mrs. C. D. Firestone, wife of the president of the Columbus (O.) Buggy Co., received face and scalp wounds and numerous bruises in an automobile accident on September 24.

George W. King, secretary of the Beaumont (Tex.) Carriage Company, recently underwent an operation for appendicitis.

A rusty piece of metal struck John G. Reichstetter, a Newark (N. J.) carriage manufacturer, in the left eye when he was repairing an old barrel several days ago and inflicted such injuries that the eye had to be taken out.

C. C. Carter resigned his position as traveling salesman with the McCaskey Register Company, at Mattoon, Ill., and accepted a similar one with the Kingman Implement & Buggy Company, of Peoria, Ill.

E. B. Lausier has been appointed assistant manager of sales of the Timken Detroit Axle Co., Detroit, Mich., and the Timken Roller Bearing Co., Canton, O.

The Arkansas Carriage Wood Co., Turrell, Ark., has been incorporated with a capital stock of $25,000 by W. S. Elder, J. H. Shettleworth and W. W. Cate. The company will manufacture all kinds of carriage wood, stock for bending purposes, etc., and will also cut singletrees, neckyokes, oak and hickory dimensions stock. The mill has a capacity of 8,000 feet of logs per day.

Digitized by Google

Trade News From Near and Far

NEW FIRMS AND INCORPORATIONS.

The Wytherville Hardware & Vehicle Co. has incorporated in Wytherville, Va., with a capital stock of $15,000.

The Neighbors Implement & Vehicle Co. has been incorporated in Mountain Grove, Mo., with a capital stock of $4,000.

The Young & Young Mercantile Co. has been incorporated in Sterling, Colo., to engage in the vehicle and hardware business.

J. E. Walters and others are organziing a $50,000 company in Lake Charles, La., to manufacture wagons.

M. L. Winans is about to erect a factory at Waco, Texas, for the manufacture of wagon beds.

C. L. Tumlin is about to erect a carriage repository in Cuthbert, Ga.

The Northwestern Wheel & Wagon Co. has been incorporated in Seattle, Wash., with a capital stock of $500,000.

O. F. Jones has opened up a new stock of hardware and buggies in Mankato, Minn.

J. A. Pence has engaged in the hardware and vehicle business in Hastings, Neb.

Hervert Bros. have engaged in the vehicle and implement business in Ravenna, Neb.

The English Carriage Co. has been incorporated in Mobile, Ala., with a capital stock of $25,000.

W. A. Rowe proposes to establish a carriage factory in El Reno, Okla.

The Carriage & Wagon Supply Co. has been incorporated in Memphis, Tenn., with a capital stock of $25,000.

The Cambridge Mercantile Co. has been incorporated in Cambridge, Ida., and will deal in vehicles, implements and grain.

A. D. Ash has just put in a new stock of vehicles, etc., in Rupert, Ida.

The Taylor Implement & Vehicle Co. has been incorporated in Memphis, Tenn., with a capital stock of $20,000.

Anderson & Son have engaged in the wholesale buggy business in Sioux Falls, S. D.

Andrew Smith has engaged in the vehicle and implement business in Satsop, Wash.

Bennett & Son have sold out their vehicle and implement business in Seneca, Kan., to J. J. Buser.

The Swivel Buggy & Wagon Company, capital $100,000, has been incorporated at Richmond, Va., to manufacture buggies and wagons. A. W. Miller is president.

William Scheim, of East Peoria, Ill., has arranged to begin the manufacture of mail and delivery wagons.

W. O. McCord is erecting a wagon and carriage shop at Blanchard, Ia.

The Kentucky Rim & Shaft Company, capital $24,000, has been incorporated by Henry F. Donigan, William Garland, M. R. Garland and others at Louisville, Ky.

The Mayer Slotkin Mfg. Co. has been incorporated to build carriages, wagons, etc., with a capital of $50,000, by Samuel Slotkin and others, 427 Second Street, New York City.

The New Albany (Ind.) Automobile & Carriage Company, capital $5,000, has been incorporated by L. C. Schwemberger and others.

Northwestern Wheel & Wagon Co. has been incorporated at Seattle, Wash., with a capital of $500,000.

The Queen City Wagon Manufacturing Co. has been incorporated by W. G. Jackson and others at Meridian, Miss.; capitail, $10,000.

Edwin A. Taylor, F. N. Taylor, C. W. Mansur, M. J. Burke and B. B. Gately have filed an application for a charter for the Taylor Implement & Vehicle Company, capital $20,000, at Memphis, Tenn.

Phoenix Girrard Carriage Co. has started in business at Phoenix, Ala.

The Warner Manufacturing Company has been organized to manufacture and sell vehicles of all kinds at Detroit, Mich., capital $5,000.

The Binkley Buggy Co., of Tipton, Ind., has increased its capital stock to $50,000.

The Ajax Motor Wagon Co. has been incorporated at Detroit, Mich., with a capital of $5,000.

The Eastern Wagon Works has been incorporated at Atlantic City, N. J., with a capital of $50,000.

The Reliance Motor Truck Co., of Owosso, Mich., has increased its capital stock from $250,000 to $500,000.

The Automatic Compound Electric Vehicle Co. has been incorporated at Camden, N. J., to manufacture automobiles, capital $100,000, by L. E. Johnson, of Philadelphia, and others.

The Resilient Spring Hub Co. has been incorporated at Newark, N. J., by M. Ritter and others, with a capital of $125,000.

The Burroughs Remountable Rim Co. has been incorporated in New York City by F. C. Keating and others, with a capital stock of $200,000.

BUSINESS CHANGES.

D. Steele retires from the firm of Steele & Stone, implement and buggy dealers at Warrensburg, Mo.

Glenville Catlin, for 15 years employed at the Van Valkenburg carriage shop at Pittsfield, Mass., has purchased an interest in E. P. Ryan's shop and the new firm will be known as Ryan & Catlin.

The Finley-Flaut Carriage Co., of Memphis, Tenn., has changed its name to The John O. Flaut Carriage Co.

C. Theurer has sold his implement and vehicle business to Samuel Platt at Baraboo, Wis.

Eckoff & Sanders succeed to the implement and vehicle business of F. W. Ellers at Steamboat Rock, Ia.

H. W. Eaton has purchased the interest of his partner, O. S. Crockett, in the carriage business at Bellefontaine, O.

Hindale & Ridenour have purchased the stock of vehicles, etc., of F. W. Clute, in Greely, Ia.

Geo. A. Buchanan and M. E. Wickert have bought out H. L. Kemp & Co., vehicle dealers at Allentown, Pa.

O. M. Scott & Bro. have sold their stock of vehicles to Donohoe & Turner at Richwood, O.

J. R. Smith, vehicle dealer at Taylorville, Ill., has purchased the McDonald automobile garage and will sell automobiles.

J. C. Skiles has sold out his implement and vehicle business in Lincoln, Neb., to S. C. Wolford.

F. F. Crane has purchased the stock of vehicles, etc., of F. T. Hoscheit, in Gresham, Neb.

John Peterson has purchased an interest in the carriage and implement business of Frank G. Wilcox, in Cedar Falls, Ia.

G. W. Armantrout has purchased an interest in the business of the Finkenbinder Hardware & Implement Co., in Dighton, Kan.

Swartz & Day have purchased the vehicle and implement business of Dickinson & Dennis, in Dexter, Kan.

Geo. W. French & Son have sold out their stock of vehicles, etc., in Plainview, Minn., to L. J. Hartke & Sons.

Louis Nispel has taken over the implement business of H. W. Haddix, including the vehicle line, in Swanton, Neb.

Digitized by Google

Catlin & Friesen have succeeded to the vehicle and implement business of C. G. Catlin, in Fairbury, Neb.

Stoeffen & Baker have purchased the stock of vehicles, etc., of H. W. Remer, in Platte, S. D.

Henry Lague has disposed of his stock of vehicles, etc., in Concordia, Kan., to A. C. Little.

Forbes Bros, have sold out their stock of buggies, etc., in Fullerton, Neb., to O. D. Means.

I. A. Winn has sold out his stock of vehicles, etc., in Udall, Kan., to Thomas Daniels.

C. K. Sweet has sold out his implement and vehicle business in Brownwood, Tex., to McIntosh & Warren.

Manhood Bros., of Neligh, Neb., have purchased the vehicle and implement business of the Thornton Company, in Orchard, Neb.

J. C. Skiles has sold out his stock of vehicles, etc., in Lincoln, Kan., to S. C. Wofford.

J. B. Kistler has disposed of his stock of vehicles, etc., in Dwight, Kan., to W. W. Wilkinson.

Davis & Ball have purchased the vehicle and implement business of Hiskey & Lunger, in Emmett, Kan.

W. W. Hasbrouck has sold out his implement and vehicle business in Oelwein, Ia., to A. A. Wilson, of Waterloo.

McFarland Bros. have purchased the business of the Hastings Buggy Co., in Hastings. Ia.

BUSINESS TROUBLES.

Samuel W. Wimer, in business as the Samuel W. Wimer Carriage Company, of Pittsburg, Pa., filed a petition in bankruptcy, placing his liabilities at $3,401.41 and his assets at $3,522.25.

Creditors filed a petition in the United States District Court to have John P. Cline, individually, and trading as the Cline Wagon Company, of Philadelphia, Pa., adjudged an involuntary bankrupt.

Charging that the Rex Buggy Company, of Connersville, Ind., has been unlawfully using his patent right on a storm curtain, Ira O. Denman, of Toledo, O., filed suit against the company in Federal Court for $3,000 damages.

John Broughton, in the bankruptcy proceedings pending against the Beaumont (Tex.) Carriage Company, adjudicated the defendant company a bankrupt and named B. Irby as temporary receiver. The creditors and officers of the company subsequently came together and an agreement was reached whereby the matter will be settled outside of court and business resumed.

The involuntary bankruptcy petition against the Elsey Hemphill Carriage Company, of Aurora, Mo., has been adjudicated by A. E. Spencer, referee in bankruptcy, in the absence of the Federal judge. A receiver for the concern will be appointed.

Judge Guy, of the Supreme Court, has appointed Albert Saulles receiver for the firm of Epstein Bros. & Sachartow, wagon and carriage makers at No. 213 Cherry Street, New York, and No. 11 Grattan Street, Brooklyn, in a suit brought by Koppel Epstein against Simon Epstein and Louis Sachartow for a dissolution of the partnership which was formed on March 15 and an accounting.

Judge Holt has granted a discharge from bankruptcy to Henry M. Duncan, of J. B. Brewster & Co., carriage-makers of Seventh Avenue and 49th Street, New York City, against whom a petition was filed on May 7, 1908, with liabilities $46,011.

The first meeting of the creditors of the H. F. Keyes Wagon Co., Clinton, Mass., was held on September 16, in Worcester, at the office of C. F. Aldrich, fereree in bankruptcy. Attorney Charles Mayberry was appointed trustee under $5,000 bonds and was given authority to operate the plant for one month.

Irwin N. Loeser has been appointed receiver for the Standard Carriage and Wagon Co., of Cleveland, O. The petition asking for a receiver was signed by the Tiffin Wagon Company, the Pontiac Buggy Company and the Flint Wagon Company.

FIRES.

W. C. Smith's carriage repair shop, Richmond, Va., suffered a small fire loss on August 30.

The sprinkler system in the Geneva Wagon Co.'s factory saved that plant from destruction by fire on September 9. The loss was only nominal.

The Age Wagon Factory at El Dorado, Ark., sustained a $3,500 fire loss.

Damage to the amount of $200 by fire was sustained by Salisbury Wheel & Mfg. Co., at Jamestown, N. Y.

Fire of unknown cause swept the carriage manufactory of S. V. Brundage & Sons, at 518 West 22d Street, Chicago. Total loss, $75,000. The firm lately added an automobile department to its plant.

The wagon factory of Oster Bros., New Orleans, suffered a $1,000 loss by fire September 21.

Fire starting on the second floor of the Kensington Wagon Works, operated by Herman & Krestein, at 2760 Frankford Avenue, Philadelphia, Pa., completely wiped out the plant. The whole loss is estimated at about $10,000.

Fire did damage of $2,000 to carriage factory of Emile Isinger. 526 Carpenter Street, Germantown, Pa.

The Sweet Mfg. Co., builders of wagon and carriages at Fond du Lac, Wis., suffered a $6,000 loss by fire.

Brewer & Butch, vehicle and implement dealers at New Castle. Ky., have suffered a fire loss.

The Keller Mfg. Company's wagon factory, at Sauk Center. Minn., was destroyed by fire October 8. Loss, $150,000.

The Clark carriage plant at Lansing, Mich., sustained a heavy fire loss October 2.

MISCELLANEOUS.

Fred Bimel, of Portland, Ind., has purchased the Decatur (Ind.) spoke factory. Frank Gast, the former owner, is going to Tacoma, Wash.

The Union Wheel and Manufacturing Co. at Coxsackie, N. Y.. are running overtime to fill orders.

A dividend of 2 per cent to the creditors of the Flickinger Wheel Company, of Galion, O., is announced by Referee Monnett. A 5 per cent dividend was paid some time ago and there may be a final dividend of 1½ per cent.

The Hannibal (Mo.) Wagon Co. is compelled to work nights on account of increased business. It has one order for 500 wagons to be delivered by January 1.

The Spalding Carriage Company, of Grinnell, Ia., is planning to start the manufacture of automobiles.

The Ancient City Wagon Works has let the contract for a large factory building in St. Augustine, Fla.

Brown Bros., carriage manufacturers at Bristol, Tenn., are improving their plant by the addition of a two-story concrete block building 35x94 feet.

The Horton Wagon Works at Augusta, Ga., will build an automobile garage and make a number of other improvements and extensions.

The Sayers & Scoville Carriage Co. will build a six-story addition to its plant on Colerain Avenue, Cincinnati.

The Deere Implement & Vehicle Co., of St. Louis, has established a branch at Montgomery, Ala., which will be under the management of E. T. Thomas who has been identified with the Deere houses for years.

J. R. Smith, the vehicle dealer at Taylorville, Ill., has purchased the McDonald automobile garage and next spring will have automobiles for sale.

A contract for 1,000 automobile bodies is being filled by the South Bend (Ind.) Spring Wagon & Carriage Company.

William J. Tickner & Son, Baltimore, Md., have awarded the contract for the erection of their new carriage depository at 2504 to 2508 Pennsylvania Avenue.

The Caldwell & Loudon Wagon Works, at Traverse City,

Digitized by Google

Mich., which recently burned, is installing machinery and as soon as possible will again be started to get out orders already on hand.

Jacob Hunsicker is adding a large addition to his coach factory and smith shop at Stouchsburg, Pa.

C. C. Snead & Son, Danville, Va., have added autos to their carriage and harness business.

Welch Bros., carriage dealers at Santa Barbara, Cal., have moved from their former location on Canon Perdido Street to the lower Hawley Building.

The R. J. Smith Carriage Co., of Rochester, N. Y., will erect a new and large plant for its factory and repository.

The Beard Vehicle Co., of Paola, Kan., has put in a stock of hardware.

M. P. Jeter, a hardware dealer of Russiaville, Ind., is adding a stock of buggies.

J. J. Bennett, a vehicle dealer of Castlewood, S. D., has been enlarging floor space.

The Drew Carriage Co., of Ontario, Cal., is erecting a $5,000 business building.

James A. Turnbull will build a carriage repository at 283 and 285 Market Street, Newark, N. J., to be of brick construction, two stories and to measure 50x120 feet, and to cost $18,000.

The Wigger Buggy & Harness Co., Marion, Ind., will handle automobiles.

Reinman & Wolfert will erect a carriage repository to cost $10,000 at Little Rock, Ark.

MANUFACTURERS ARE WELCOME.

Office of the Secretary and Treasurer.

Wilmington, Del., September 25, 1909.

To the Manufacturers of Carriages, Wagons, Sleighs and Motor Cars:

You are very cordially invited to attend the thirty-seventh annual convention of this association, and to visit the exhibition of bodies, gears and materials used in the construction of your product, which will be held in Convention Hall, Fifth and L Streets, N. W., Washington, D. C., during the week commencing October 18 of this year. The exhibition from October 19 to 23 inclusive, and the convention, October 19, 20 and 21.

Business meetings at the Arlington Hotel on October 19, 20 and 21.

While we would be pleased to have you become a member of the association, you will be welcome to both the exhibition and the convention whether a member or not, as they are free to all vehicle builders.

By attending the convention you will meet many representatives of the best and largest manufacturers of vehicles in the country, renew old friendships, make new acquaintances, and hear something at the meetings which we feel sure will be beneficial to you.

At the exhibition you will find all the latest and best that the supply trade has to offer for the use of vehicle builders.

A visit to this annual reunion of your business associates will be to your advantage and we sincerely hope you may be present.

Henry C. McLear, Secretary and Treasurer.

TIMKEN BEARINGS TO BE MADE IN ENGLAND.

Arrangements have been made with Electric and Ordnance Accessories Co., Birmingham, Eng., by the Timken Roller-Bearing Co., of Canton, O., to manufacture Timken roller-bearings in England. Timken bearings have already been adopted by the Wolseley Motor Car Co., Ltd., Birmingham, England.

MORE TIRES FROM OHIO.

The Mansfield Rubber Co., of Mansfield, O., has produced its first automobile tires, showing three standard sizes. The company recently equipped a new plant for motor car tire production.

SEPTEMBER MEETING OF THE CINCINNATI CARRIAGE MAKERS' CLUB.

The September meeting of the Cincinnati Carriage Makers' Club was held on Thursday, the 9th, at the Heidelberg. The evening was a delightful one for an outdoor dinner, and an old-fashioned Kentucky chicken dinner was thoroughly enjoyed by the 67 members and six guests present.

The following were elected to membership: Chas. J. Forbes, proprietor of the Banner Varnish Co., Cleveland, O.; Wm. C. Klein, salesman, Landers Bros. Co., Toledo, O.; Chas. Leibeth, salesman, Seinsheimer Paper Co., Cincinnati, O.

The question of attending the C. B. N. A. convention, at Washington, came up for discussion, and a motion carried to dispense with the October meeting, and apply a part of the funds to cover entertainment aboard the train—the details, such as selection of route, time of leaving, etc., to be left in the hands of the Board of Governors.

P. T. Rathbun, secretary of the Tri-State Vehicle and Implement Dealers' Association Co., addressed the meeting and outlined a plan to bring the dealers and manufacturers closer together through the medium of an open meeting to be held at a convenient time during the convention of the Tri-State dealers, which is to take place in Cincinnati in November. The suggestion was to have a committee consisting of five manufacturers attend the meeting above referred to, at which a general discussion of trade abuses, advance in price, terms and matters pertaining to the trade in general would be had.

At the conclusion of his remarks a motion carried authorizing the president to appoint said committee, after which adjournment followed.

MILES RETIRES FROM RACINE-SATTLEY CO.

Herbert E. Miles, principal stockholder of the Racine-Sattley Company, with factories at Racine, Wis., and Springfield, Ill., engaged in the manufacture of wagons, carriages and farm implements, has resigned as president of that $3,000,000 corporation, and will be succeeded by George Yule, of Kenosha, who a year ago was appointed general manager of the company.

Mr. Miles has been prominent in tariff reform work, appearing before congressional committees and seeking the appointment of the tariff commission, and his plans have been indorsed by President Taft.

Miles was mentioned as a candidate from the First Congressional District to succeed Henry Allen Cooper, but refused to run because of business affairs. His retirement from active business will, it is believed, result in a determined effort by Republicans of the district to induce him to become a candidate against Cooper.

A NARROW ESCAPE.

While Mr. Edward W. Harrol, president of the Fairfield Rubber Co., was talking to his chief engineer, Mr. Young, on September 29, the cylinder head of the engine blew out. A preliminary escape of steam warned Mr. Harrol, who had just time enough to vacate his chair which was immediately afterward hurled across the room. As the factory has been running nights for the past four months on account of a rush of orders, the accident came at a particularly bad time.

CANADIAN CARRIAGE MERGER.

Arrangements are being made to unite various Canadian carriage companies. The new concern will be known as the Carriage Factories, Ltd., and will have the following securities: $2,000,000 7 per cent preferred and $2,000,000 common stock and $1,000,000 6 per cent 30 year bonds. There will be issued $1,200,000 each of preferred and common stocks and $500,000 bonds. It is said that the bonds will be offered to the public at 95 with a bonus of 25 per cent of the common stock.

Digitized by Google

OBITUARY

Edward M. Murphy.

Edward M. Murphy, president of the Oakland plant, in Pontiac, of the General Motors Co., and regarded as the man who had done more for Pontiac than any other citizen, died on the morning of September 4 from apoplexy. He was born in Wayne, Mich., December 19, 1864. He organized the Oakland Motor Car Co., which he conducted till a few months ago, when it was sold to the General Motors Co. Within the last few months Mr. Murphy was arranging a deal whereby the Pontiac Buggy Co. he had formed in 1893 and with which the Dunlap Vehicle Co. was merged a year ago, moved to Rockford, Ill., and the two big factories in Pontiac were secured by the General Motors Co. Mr. Murphy's death will in no way affect the erection of the big auto plant now in process of building at Pontiac by the General Motors Co.

G. M. Haskell.

G. M. Haskell, engaged in the carriage making and repair business until his health failed him three years ago, died August 28 at his home in Mexico, Mo. The deceased was born in Herkirmer County, New York, 77 years ago. He is survived by a wife andsixchildr shrdl S,Rdkwshrdl uuonouononononoshrdluono wife and six children.

Phineas D. Garrison.

Phineas D. Garrison died at his home, 250 Mt. Pleasant Avenue, Newark, N. J., September 9, aged 79 years. When Mr. Garrison moved to Newark about 20 years ago he became identified with the carriage manufacturing concern of Ogden & Budd, and continued in their employ until their retirement from business 10 years ago, at which time he also retired. He is survived by his wife, three sons, three daughters and three grandchildren and two great-grandchildren.

Almond G. Stimson.

Almond G. Stimson, who for 25 years had conducted a carriage factory and blacksmith shop in Canandaigua, N. Y., died in a Rochester hospital on September 23.

Charles E. Brown.

Charles E. Brown, vice-president and treasurer of the Shortsville (N. Y.) Wheel Co., died August 28, aged 48 years. Mr. Brown was born in La Peer, Mich., and moved to Shortsville in 1887, buying a half interest in the Shortsville Wheel Co. It was due to his close confinement with business duties that his health broke down. The success of the company, one of the largest and most progressive in this country, was attributed largely to Mr. Brown's keen business ability. He was widely known throughout the United States, having been a member for a number of years of the American Wheelmakers' Asociation. The deceased is survived by his wife, one daughter and three sons. The employees of the Shortsville Wheel Company attended the funeral in a body, and six of the older employees acted as pall bearers.

Arthur F. Hertzler.

Arthur F. Hertzler, president of the Orchard City Wagon Co. at Burlington, Ia., died September 20, aged 55 years. He was connected with the Orchard City Wagon Co. since he was 18 years old. He leaves a wife, three daughters and one son.

Edward F. Allen.

Edward F. Allen, aged 78 years, died September 14 at the home of his son in Connellsville, Pa. For many years Mr. Allen carried on a wagon manufacturing business at Cumberland, Md. He leaves one son and three daughters. The son was attending a funeral in the neighborhood when his father dropped dead.

Lawrence McGrath.

Those who have been identified with the carriage trade for a number of years, and particularly the traveling salesmen and other local dealers in and about Brooklyn, N. Y., will no doubt be shocked to learn of the death of Lawrence McGrath on October 9. Mr. McGrath was in his 63d year and had been in the employ of J. Curley and J. M. Palmer since 1874. He was a thorough mechanic and foreman, and for many years had rendered most valuable service. He was loved by all who knew him, an dnowhere will his loss be felt more than in Brooklyn. He left a widow, two sons and a daughter.

George Weyrauch.

George Weyrauch, retired carriage and wagon builder, died at Ferndale, Sullivan County, N. Y., September 30, aged 71 years.

ATTRACTIVE, BUT FALLACIOUS.

One of the earliest ideas to attract the attention of those interested in motors is one which still appeals to those who have not deeply studied the question. I refer to the adaptation of motors to existing horse vehicles, says Henry Sturney in London Motor. I took out a patent myself on an idea in this connection as far back as 1895, but long ago saw the fallacy of the notion, and this note is penned as the result of a letter just received asking me where a motor fore-carriage arrangement could be obtained which could be fitted into an ordinary brougham. In my arrangement above alluded to, I mounted the lower half of a turntable or "fifth wheel" upon a three-wheeled construction steering with the single wheel, the fore-carriage, carrying the motor, of course following the steering wheel and the rest of the carriage trailing aft. Two or three years later, practically the same idea, but without the odd wheel, was put into commercial shape in Germany and made its appearance at one of the early Cordingley shows, and again in recent years the "Pullcar" was practically founded on this notion, the original idea of those who put their money into the venture—which was based on a pair of combined driving and steering wheels—being that a large trade would be done in supplying the outfits to cab owners and others, who could thus convert their horsed vehicles into motors, without the sacrifice of body and back wheels. But the Pullcar people soon found that to make a successful vehicle—which they eventually did very fairly well—it was necessary to discard the ex-horse body and wheels and to build the car as a complete whole, constructed from "A" to "Z" for the work. And any other experiments along the same line must ultimately come to the same conclusion, for the weak point of the notion exists in the fact of the wide difference in the speeds of the two classes of vehicle. The idea in itself would work perfectly if the motored vehicle traveled no faster than it did before, when drawn by a horse. But the whole object of utilizing a motor is to obtain increased speed, and when this increased speed is given it is soon found that the tail end of the outfit was not constructed for it and is unable to withstand the shaking which it gets at the higher-speed rate. This is where the trouble comes in, and always will come in, so that, unless for any specific purpose, merely the substitution of a motor for the horse is required, it will be useless following further this line of investigation.

TIMBER FOR SPOKES AND HUBS.

St. Louis and Chicago capitalists have taken an option on 65,000 acres of timber land twenty-five miles southwest of Bismarck, Mo., and expect to begin development soon. Sawmills, spoke and hub factories will clear the land, which will then be used for horticulture, agricultural and grazing purposes. Paul Brown, of St. Louis, and other tobacco experts pronounce the land to be ideal for tobacco, and much of it will be used for this purpose by Tennessee and Kentucky farmers.

TIMKIN-DETROIT TO ENLARGE.

The Timken-Detroit Axle Co., of Detroit, Mich., has purchased about two acres more land adjoining its present factory site. The purchase is for the purpose of providing for future factory additions.

Digitized by Google

JOHN F. GALVIN HIGHLY HONORED.

Citizens of His Native City, New York, Ask Him to Make Race for Aldermanic Presidency.

John F. Galvin, recently elected president of the C. H. A. T., and who is also a member of the Carriage Builders' National Association, is in a very prominent position before the people of his native city, New York. He was honored with the Democratic nomination for president of the Board of Aldermen. Being a native New Yorker and active in the business, club and social life of the metropolis, his nomination is generally regarded as an exceptionally strong one.

Mr. Galvin is a large employer of labor, being president of the Metal Stamping Co., manufacturers of carriage hardware, a business that he organized twenty-six years ago. His plant is situated at 243 West Street, offering excellent surroundings as to light and air to employees and convenience to the trade. This plant is one of the largest of its kind in the country. Mr. Galvin is also president of the Automatic Axle Co., of Lancaster, Pa., and is a director of Electric Metals, Ltd., of Niagara Falls, and of the American Tropical Hardwood Co., of which he was formerly president.

Mr. Galvin is 49 years of age, was educated in the city public schools and later graduated from the College of St. Francis Xavier. He is a trustee of the Champlain Club, and resides at No. 341 Riverside Drive. He is also active in the Merchants' Association, and served as a vice-president of the Democratic reorganization conference held in Saratoga not long ago. The trade will watch Mr. Galvin's progress with interest.

PEORIA PREPARING FOR CONVENTION.

The Peoria Implement, Vehicle and Hardware Club, of Peoria, Ill., held a meeting September 25 to make preliminary arrangements for the entertainment of the dealers who will attend the annual convention of the Illinois Implement and Vehicle Dealers' Association to be held in Peoria, December 7, 8 and 9. The dealers will be tendered a banquet, a smoker and other forms of entertainment. On the evening preceding the first day of the convention the officers of the State association will meet with the club to make final arrangements for the event.

SECHLER TO BUILD ADDITION.

Their East Fifth Street, Cincinnati, properties recently changed hands, and it is announced will mean the wrecking of the old buildings on the property and the building of a large structure which will become an addition to the plant of Sechler & Co., carriage manufacturers.

MEETING OF ASSOCIATES.

The annual meeting of the Associate Members of the Carriage Builders' National Association will be held on Wednesday, October 20, at 3 p. m., at the Arlington, instead of the New Willard Hotel, in Washington.

TO BUILD MOTOR TRUCKS.

The Charles Abresh Co., Milwaukee, Wis., has branched into the motor truck business, making a complete line varying from 500 pounds to three tons. R. H. Green, recently connected with the Brodesser trucks, has been appointed sales manager.

WILL LOCATE IN ROCKFORD.

Carl E. Lipman, of Beloit, Wis., is organizing a company to manufacture a six-cylinder car of his own design and to be known as the Rocoit, which is a combination of Rockford and Beloit. The factory will be located in Rockford, Ill.

THE SELDEN PATENT DECISION.

Some Weeks Likely to Elapse Before Any Important Action Is Taken by Either Side—Vast Amount Is Involved.

Discussion of the Selden patent decision rendered by Judge Hough on September 15 continues uppermost in automobile circles, and is likely to for some time to come. The vast importance of the decision is realized to a much greater degree in the trade than by the general public.

Conjecture is devoted chiefly to the action likely to be taken to uphold the patent rights. This has not been decided upon and is at present a subject of much concern to the men favored by the decision. At any rate, two or three weeks will probably elapse before any definite move is made that will indicate the general purpose of the successful complainants in the suit.

The Ford Motor Company, through Henry Ford, has announced that the fight against the patent will be carried on. This means the putting up of a bond to cover the unpaid royalties based on one per cent of the catalogue price of the cars manufactured since the issuance of the patent. The amount, taking in all the gasoline cars built outside of the patent, is estimated to be about $5,000,000.

In the last year or two there has developed a bond of fraternity between the licensed and unlicensed manufacturers, as shown by their participation in the national shows at Chicago and other points. This feeling, it is believed, precludes action of a drastic character in the enforcement of the patent rights, although, to quote a prominent member of the Licensed Association, "there is no reason why the penalty of infringement should not be fully paid."

Under the law the man who builds, the man who sells and the man who uses a machine infringing a patent are equally liable. Because of the wide distribution and frequent change in the ownership of cars it would seem an impossible task to reach all the owners, or at least one fraught with enormous expense. This seems to render more likely a final outocme in which the settlement will be wholly with the successful litigants and the infringing builders.

One result of the decision, it is anticipated, will be to discourage the formation of new companies to build automobiles, and thus give to the industry the stability that will enable it to successfully meet periods of business depression. While there is no fear of overproduction for next year, owing to the inability of parts makers to meet the demand, the building of too many cars is the menace that conservative men in the industry fear more than anything else. The patent, of course, has but three years more to run.

Wide distribution of the opinion rendered by Judge Hough is being made by the Association of Licensed Automobile Manufacturers, and the opinion has been closely read by nearly every one in any way prominently connected with the industry. While upholding the patent, Judge Hough does not give much credit to the patentee. Reviewing the progress of automobile building he says:

"During the later years of this period (1879-1895), and while Selden was in very leisurely fashion combating examiners, who evidently had small conception of what was meant by light self-propelling vehicles usable on the common roads, Duryea, Olds, Ford and others in America, the Panhard and Peugeot companies (and many others) in France were experimenting with actual cars, and in 1894 a public race meet was held in France whereat cars now as archaic in appearance as Selden's demonstrated that they actually could propel themselves from Paris to Rouen at about twelve miles an hour. The engines of some of them were modified Ottos and 'liquid hydrocarbon gas engines of the compression type,' and is my belief from the evidence that Selden had issued there had been developed engines answering to his phrase, which, as a matter of history, are not derived from his engine—that others reached his type without knowledge of him or his labors. Indeed (while certainty is impossible), it

Digitized by Google

plows and cultivators in the field, and of developing power as a stationary engine for threshing and similar work. If it can be equally well adapted for hauling one or more loads of farm produce, ore or other materials on the common wagon roads economically, so much the better.

Horse flesh is wholly inadequate to the task of cultivating and reaping the enormous wheat crops of the huge farms in the far west. Steam traction engines have been used for years in this work, but latterly there has come an urgent call from all over the western states and Canada for an engine of medium weight and increased power that would go over soft ground and pull plows; that would not require the hauling of fuel and water and endanger straw and haystacks and farm buildings by open fire. Although the gas engine tractor was developed almost simultaneously in England and America, only about six years ago, its merits have been recognized quickly and it is already displacing many horses and steam traction engines on the farm. And as the economy and many other advantages of the mechanical cultivator are more widely understood, the demand will grow to astonishing proportions, if one may judge from the general use of the most improved sowing and planting machines, reapers and binders, threshers and so on, and also the rapid introduction of stationary and portable gas engines for light power purposes, such as churning, pumping water, shelling corn, cutting feed and similar tedious and wearisome work.

Because of the vast area of farms in the western United States and Canada, it is to be expected that a heavier and more powerful type of tractor will be produced and demanded on this side of the Atlantic than in Europe, where the leading agricultural motors are of a lighter and finer build than our own, but owing to the great diversity of farm work, a variety of special machines of different sizes, powers and types will be required, and this fact opens the field to any motor truck maker who cares to enter it.

VALUE OF STYLE AND APPEARANCE.

While the enormous strides that have been made in body design and body building are apparent on every side, it nevertheless is the truth, says Motor World, that there are not a few cars that long since ceased to be new to the public that are wholly or woefully lacking that character which is contributed by a body of pleasing design and proportion. The bodies which they employ suggest that they were designed by the same men who designed their motors. The craft of the mechanic instead of the craft of the artist is apparent in their lines.

Usually these cars are marked by the "tinny" hoods and radiators and cheap trimmings to which the Motor World recently referred and in most cases their bodies are mounted so high as to add to the "homliness" of the general design and get-up. Those responsible for them appear to have no conception or small conception of the far-reaching influence and value of good appearance and of "that exquisite something" called style. So long as the motor motes satisfactorily they appear blindly content. Yet it is a fact that were a comparatively few dollars expended in securing an artistically designed body, and in mounting it on a dropped frame or on longer springs, and in providing a substantial looking hood and radiator, the change that would be effected would amount to a revelation that would immensely enhance their reputation and standing and cause them to be eagerly sought.

They are changes that would reduce the selling effort, if not the selling expense, fully one-half; in fact, there is small doubt that the altered and more stylish appearance of the cars would not only attract purchasers and make sales very much easier, but that the average buyer would as readily pay an incresaed price that would more than cover the cost of the refinements.

It is possible to name a number of cars listed at about the same price that are not comparable in respect to appearance and style, and in every case it is the one of superior appearance that outsells the others, even though the latter may pass as "popular cars"; usually their popularity is restricted chiefly to the rural districts. In every case also, it will be found that this style and superior appearance is due to body design, low mounting and substantial appearing hoods and radiators. It is an effect worth striving for and worth the price it costs; for it pays large returns.

CHANGING FROM ONE SURFACE COLOR TO ANOTHER.

When the automobile owner desires to change the color of his machine, that is to say, change it radically, he starts out with the determination usually to have the paint burned off, and a new structure of pigment built up, and to see that plenty of other things are done to get the surface in proper trim. This represents one phase of the layman's notions in regard to changing colors, etc.

Before burning off the old paint give it a careful examination, and if the film is solid and intact with nothing more serious than some fine checks affecting it, simply keep the burning torch quite away from it. Even the surface that has cracked deeper than fire checks go, can in most cases be surfaced with roughstuff and made to look for a considerable length of time like new. In case of simple fire checks pricking through the surface, sandpaper lightly with No. 1 paper, and apply a coat of lead, colored to meet the final color decided upon, which will dry out flat without any gloss. Brush this on with a soft point bristle brush, and stand aside for twenty-four hours to dry. Putty any cavities or defects found, and put away for another twenty-four hours. Then first level down the putty spots, after which give the whole surface a careful, uniform sandpapering. Now lay the ground color on, and then by easy stages to insure safe drying work out to a finish.

Where the cracks go deep into the surface sandpaper down hard and close with No. 1½ sandpaper, and apply lead as in the first case mentioned. Putty upon this coat, and apply at least three coats of roughstuff. Rub out in due time, and form the desired foundation work up to a finish after the most approved methods. Thus a change from the old to the new color can be made in a straightforward and direct way.

Burn off the old paint only as a last resort. Where the paint is firm and solid, and in good condition otherwise, it is a sheer waste of time and money to burn the old paint off. And in so doing you take the chance of developing a new surface weaker in some of its essential points than the old paint structure. As long as the old paint stands up and furnishes a strong and virile surface it should be left alone, and the desired change of color made directly over it.

WILL ESTABLISH BRANCH AT PERU.

The Salisbury Wheel Co., of Jamestown, N. Y., will establish a division factory at Peru, Ill., and expects to be in working operation by December 15. The output of the concern is automobile wheels, but side productions will be taken up, such as the manufacture of automobile axles. The Peru company will be organized at $150,000 capital stock. The company claims to have orders for $500,000 business the first year.

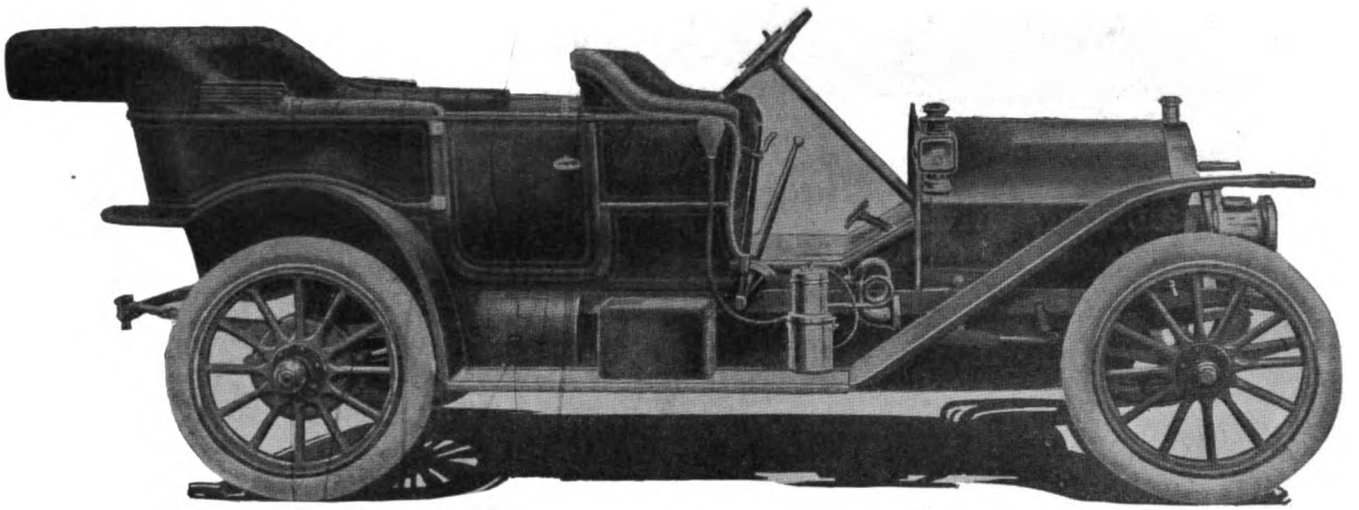
WILL MAKE AUTOMOBILES.

The New Idea Spreader Co., Coldwater, O., well known as the manufacturers of the "New Idea" manure spreader, are making preparations to put a new automobile on the market in the near future. It will be a business man's machine, simple in construction.

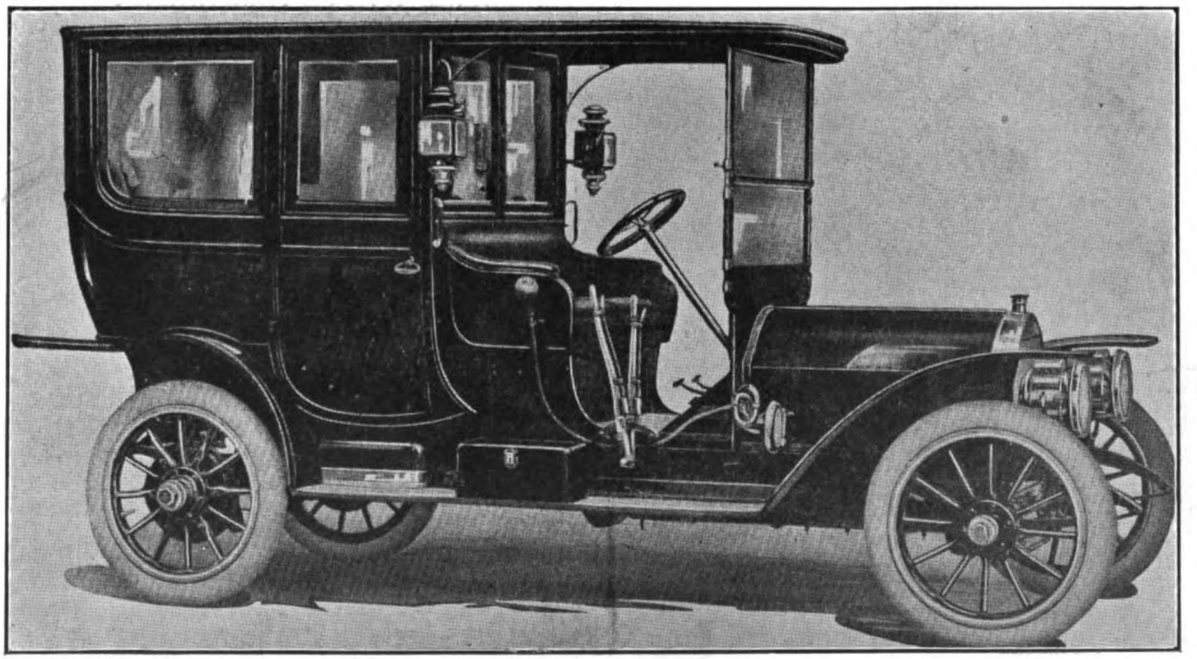
Carriage makers have raised the price of their vehicles 10 per cent, which shows that Congress has no monopoly in revision upward.—Wilkesbarre Leader.

Digitized by Google

Illustrated Automobile Section, October, 1909.

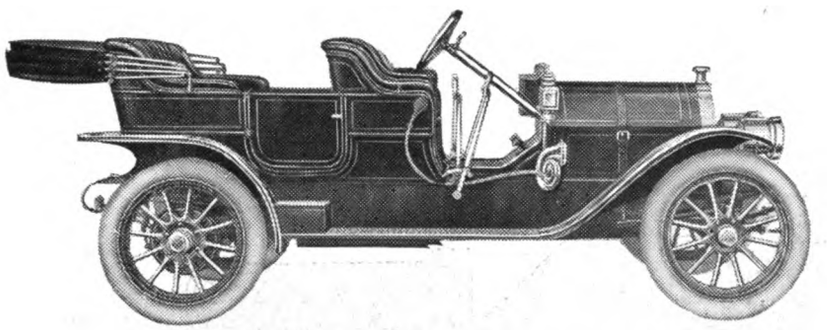


SPEEDWELL FIVE-PASSENGER CAR.
Built by The Speedwell Motor Car Co., Detroit, Mich.

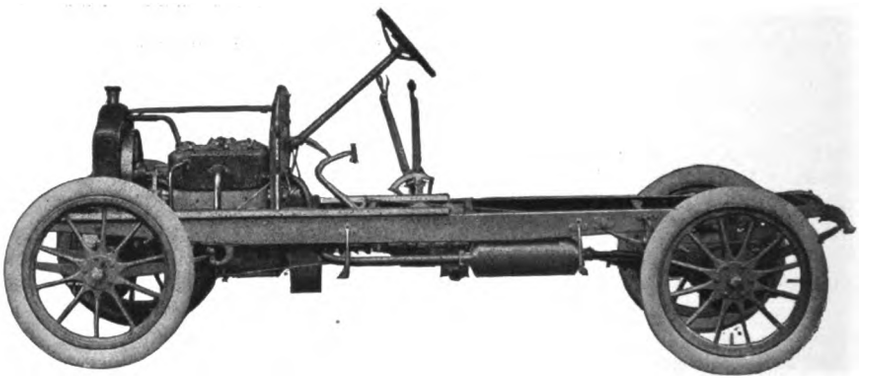


STEVENS-DURYEA SEVEN-PASSENGER LIMOUSINE.
Built by Stevens-Duryea Co., Chicopee Falls, Mass.

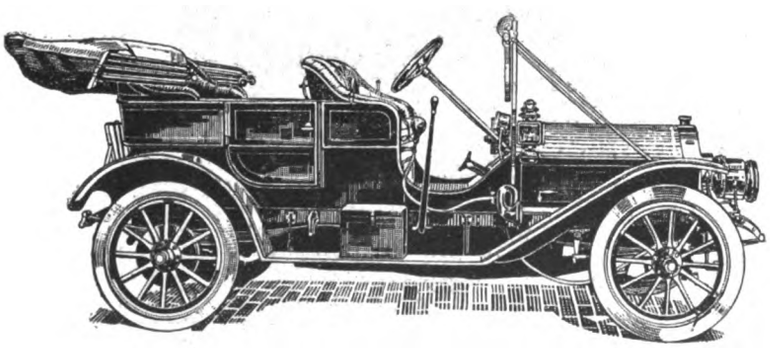
Digitized by Google



MODEL "T," MITCHELL CAR.
Built by Mitchell Motor Car Co., Racine, Wis.

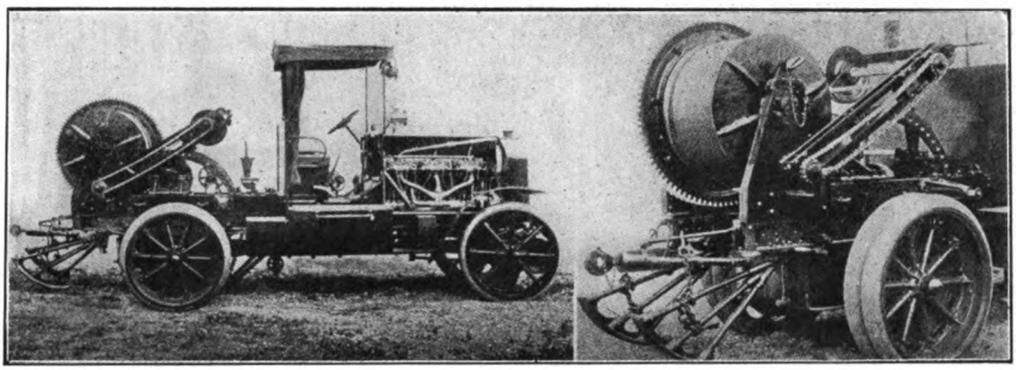


CHASSIS, WHITE GASOLINE CAR.
Built by the White Company, Cleveland, Ohio.

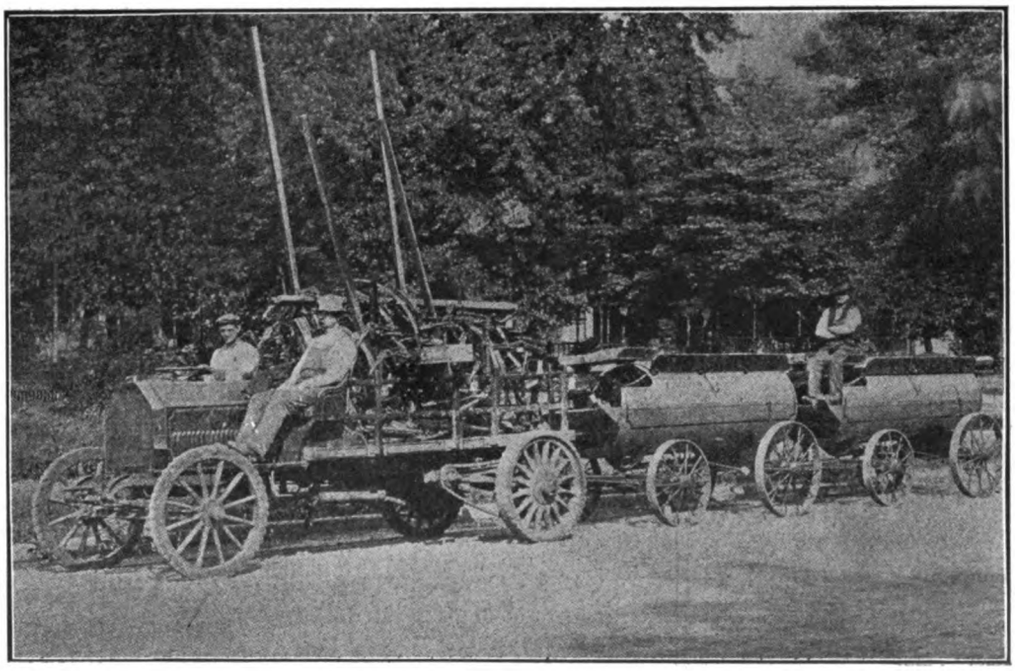


MODEL "L," CARTER CAR.
Built by Carter Car Co., Pontiac, Mich.

Digitized by Google

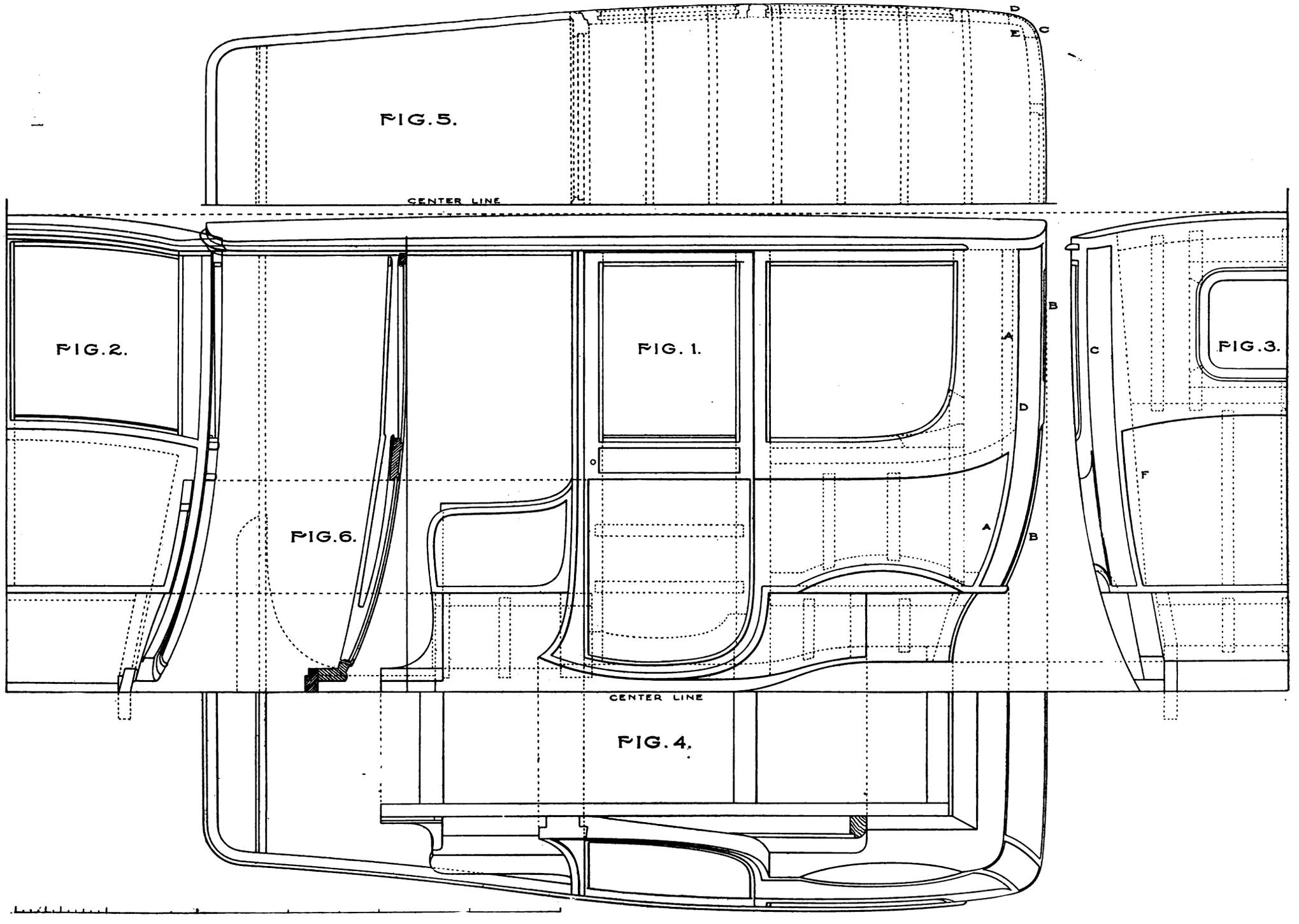


AUTO-TRACTOR USED IN AUSTRIAN ARMY.



AUTO-TRACTOR FOR GENERAL HAULING USE.

Digitized by Google



Scale ¾ inch to the foot.

WORKING DRAFT OF MEDIUM SIZED LIMOUSINE BODY.

Description on opposite page.

Digitized by Google

Body Construction and Finish

DESCRIPTION OF WORKING DRAFT OF MEDIUM SIZED LIMOUSINE.

(Drawing on opposite page.)

This drawing is made to fit a 125-inch wheel base Pierce chassis, but, except for the curved base line, there is nothing about the job that will prevent its being used for any one of the other standard makes where the length and position of the rear wheel from the dash correspond.

In this body we show one of the novelties of the season, a round cornered body, made of wood throughout and eliminating the bending of the panels to form the corner. The quarter light is bent to conform to the side sweep and is made to drop as well.

The distance from the front of the curved dash to the front seat is 25⅞ inches, from the front of seat to the back of coupe pillar is 20 inches. The coupe pillar is 1¾ inches over all at the top, measured on the side; this is lighter than usual, but by having the front glass frame made with a brass angle at the bottom to hook over the fence rail, we only have to allow ⅛ inch between the front of the rail and the back of the wood guide on the coupe pillar, whereas ⅝ inch is the custom. The doorway is 22¼ inches between the rabbets, and the length of the body from the face of the coupe pillar to the outside of the extreme back in the center is 63 inches. The side quarter light is 24¼ from back to front and 22¼ inches high. The back light is 24 inches by 15 inches. The underbody is 13 inches deep. The seat frame is ⅞ inch thick and the height from top of seat frame to under bows in the center is 47 inches, the roof sweep being 2½ inches. The width across the job at the coupe pillar is 54 inches, and across the hinge pillar outside the molding is 57 inches. The width across the front seat at the bottom is 44 inches, and the width inside on the seat line of the rear seat is 55½ inches, thus giving comfortable seat room for three grown people. The turnunder on each side to the bottom of the door rocker is 8¼ inches and at the back the turnunder is 5½ inches to the bottom of the seat frame. The rear seat is 21 inches deep from the outside corner; this leaves 34¼ inches between the back of the front division and the front of the rear seat, thus making ample room to attach folding seats to the division and, if we make these small seats 15 inches, we still have 19¼ inches knee room between. On the base line we have made the body to overhang 2 inches at the back. The length of the chassis from the front of the dash is 93⅛ inches. The length of body from same point is 95⅛ inches. The width of body on bottom is 33½ inches.

In the construction of the body the sills are 1½ inches wide by 3 inches deep at the front, 3¾ inches deep at the middle of the body and 2 inches deep at the rear end. The sills are made square on the outside with the bottom, not flared, as the bend of the chassis frame, which compels the cutting up into the sills from the bottom would make the body wider at the back than it is at the front, and as the rear springs are above the top of the chassis this would necessitate notching out for same. As this work might have to be done after the job is completed, it is not only expensive, but very unsatisfactory. On this draft we show the underbody framing lapped on to the sill at the proper bevel and the framing and sill flush at the top edge of the sill. This will necessitate the framing being sawed so that the lap will come flush on the outside of the sill which is a different angle than the framing, the one being straight and the other set on a bevel. The inside of the ½ inch panel is then beveled from the inside the depth of the sill and glued on. The panel will be all dressed away at the bottom edge, leaving a thin edge. If the bevel is so great that the panel is too thin at the bottom it is left up ½ or ¾ inch from the bottom edge. This forms a line and makes a very good finish.

The duster is fitted over the front end of the panel and must not be too wide to come in from the molding on the dash. The front seat sides are white wood planks with a framing upright piece at the front. The coupe pillar is 4¼ inches on the front face. The door pillars are 2½ inches and the hinge pillar is 2⅜ inches over the rabbet. Coach hinges are used. The door rocker is 2½ inches from bottom of molding to front of bevel. It is a sawed piece and framed to hinge pillar with a short lap just above lower edge of quarter panel. The under body is built out to give foot room inside at the rear seat. This is done by putting a 2½-inch post 1 inch ahead of the end of the spring for clearance. In the drawing this post comes right to form the front support for the rear seat frame. The ½-inch panel is rabbeted into this (see Fig. 4), and this offset or box is continued parallel to the sill, to the front edge of the hinge pillar, and a wedge piece is put on sill from this point to the back face of the coupe pillar, the sawed door bottom being fitted to this.

The back corner pillar is got out of 5½-inch stock and is sawed to the shape of the corner pillar pattern. This pattern is made to the lines AA and BB, Fig. 1, which are 4 inches apart. The moldings for the lower quarter and the back panels are worked on solid and the upper quarter and the upper back panels are glued on the pillar, the edge of the panels forming a rounded finish, in line with and corresponding to the lower solid molding, as C, Figs. 3, 9, 5, and D, Figs. 1, 7, 5, as illustrated on the side, back and top views. The upper panels are glued over the belt and form a molding finish also on their lower edge. A filling piece is glued to the upper line A (Fig. 1) to give better bearing and glueing surface for the upper quarter panel. On the top plan (Fig. 5) at E is illustrated the inner side of the corner pillar rabbeted out to the thickness of the top rail and the framing of the sides and the back. This lightens up the pillar and gives more room inside to fasten the trimming.

We believe this is one of the best methods of forming a round cornered job that has been used and it has the advantage of being very practical as well as doing away with the all unnecessary moldings.

The wheel house is formed by fastening a block on the top of the seat frame. To this the panel is glued. Then it is cut away until not less than 3 inches clearance is maintained between the inside of the tire and to the height of the mud guard on the side. It also is good practice to form the offset or box on the under body at least ½ inch above the bottom edge of the sill, as illustrated on the side elevation, because these bent frame chasses are never uniform in shape; therefore, if fitting is needed when assembling the body, the true line of the panel will not be destroyed.

FF, Fig. 3, is the inside line of back corner pillar, from which the turnunder sweep is pinched off.

WALBORN & RIKER FAIL.

The Walborn & Riker Co., of St. Paris, O., well-known builders of pony vehicles and employing 100 hands, went into the hands of a receiver October 6 upon the application of Freeman Riker. H. M. Black, of the First National Bank, of St. Paris; Burt Taylor, of the Central National Bank, and A. G. Harmon were appointed receivers.

Digitized by Google

STANDARDIZATION GATHERS FORCE IN BODY WORK.

Advantage is realized at no inconvenience when account is taken of general practice in body work as well as in mechanical designing. There may be no apparent direct gain in following in the path blazoned by a previous worker in the same vineyard, but experience is always a cashable asset, and things done are natural models to go by.

Take the driver's seat, for illustration. Why should a motorist have to get used to a different set of dimensions when he

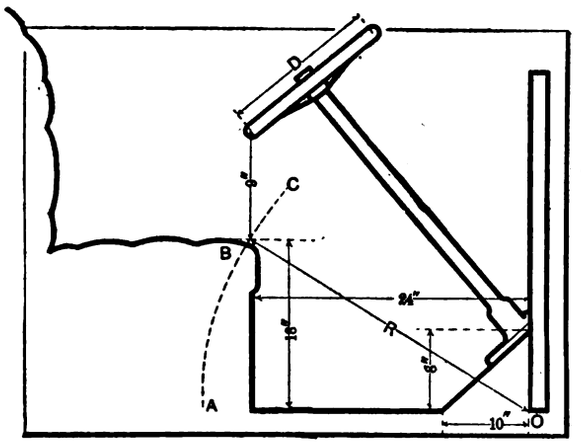


Fig. 1—Diagram showing seat and steering post dimensions

climbs out of one car into another? Referring to Fig. 1, it will be observed that the distance from the back of the "dash" to the front of the seat is 24 inches; this dimension obtains to a great extent in various cars, and if it is a sufficient distance, why should not motorists have the benefit of this measurement in all makes of cars? If it is not enough, why should body makers use this dimension? In the same figure the slant of the footboard is that due to an elevation of eight inches, and ten inches back. If this is a convenient slant, why not standardize it? If it is not a good slant, why use it?

If the seat is 18 inches from the deck, when the distance back from the dash is 24 inches, is it not self-evident that the seat should be moved back to the radius R, on the arc A C, cutting the point B when the seat is less than 18 inches up from the deck? If the distance from the rim of the steering wheel at its low point is nine inches as a rule, would there be any objection to having this dimension fixed, so that autoists would become accustomed to the position and feel "at home" in every car at a moment's notice?

Granting that there are good reasons why all cars should not have the same length of wheelbase, even so, this does not make it necessary to employ hybrid lengths of bodies; surely a body can be some one of a regular set of lengths. Fig. 2 shows the prevailing lengths expressed in metric measurements for even values, with English equivalents. The differences are represented by about five-inch increments and it would be a positive advantage to a buyer of a car were he in a position to purchase a new body in a year or so, when the style changes, as it frequently does, thus bringing his old car up to date in point of appearance at any rate, and with standard dimensions it would be possible to explore the open market, procuring a body from stock, quickly, and at a reasonably low figure.

That the clearance should be minimized is one of the fixed principles of designing on the count that the lower the center of gravity the better will be the behavior of the car. Certainly the center of gravity will not be lowered by perching the body high in the air; the distance C, then, remains to be fixed on a basis such as will afford an adequate clearance, and no more.

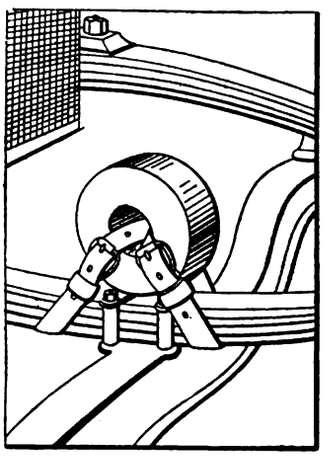


Fig. 3—Suggested standardization of clearance for frames

Under the circumstances it would appear to be the height of good sense to standardize the clearance, taking into account a reasonable verticle bounce of the body, when, if the springs are not up to a suitable standard, the idea depicted in Fig. 3 represents the cure.—The Automobile.

The great character expresses itself in broad comprehensiveness of the needs of humanity. The little character sees only its own needs or wants.

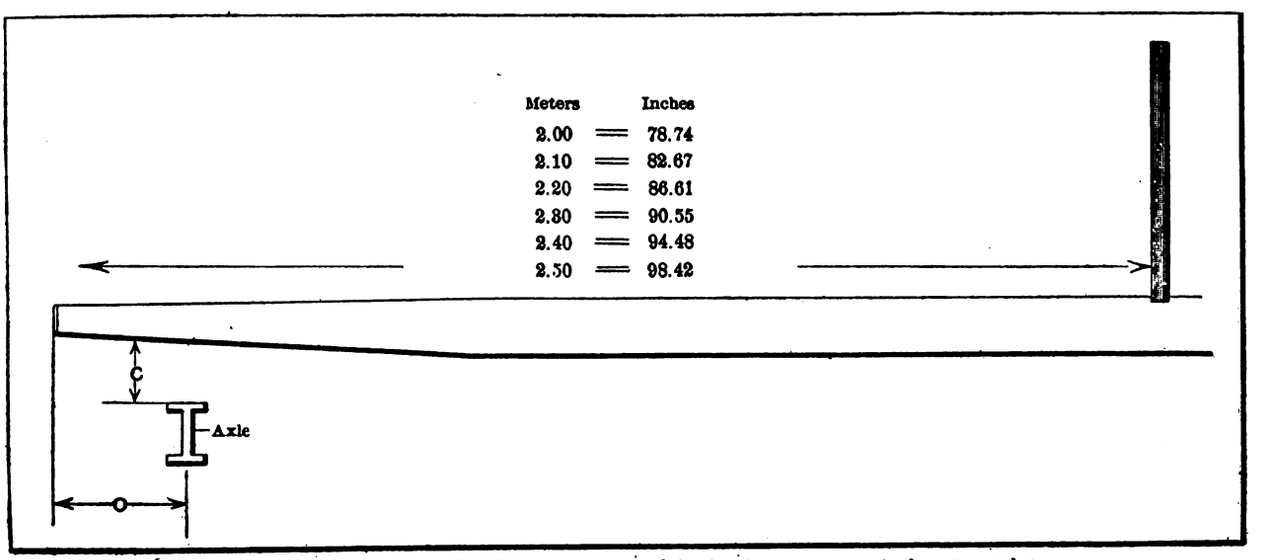
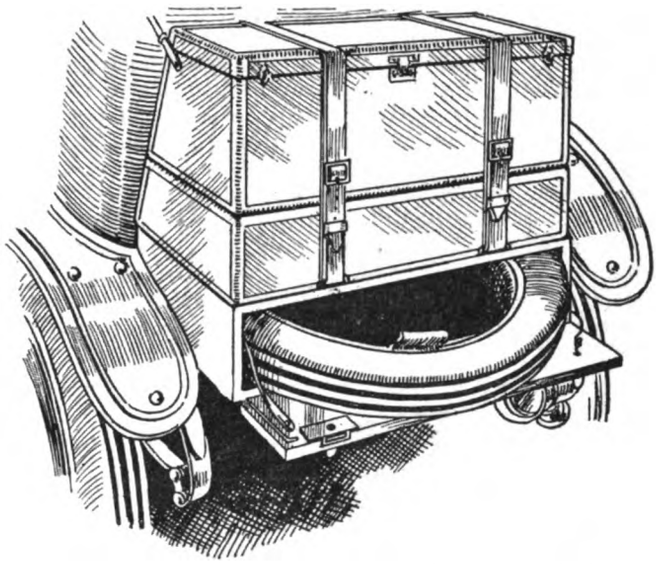


Fig. 2—Showing prevailing lengths of frames expressed in metric measurements for even values

Digitized by Google

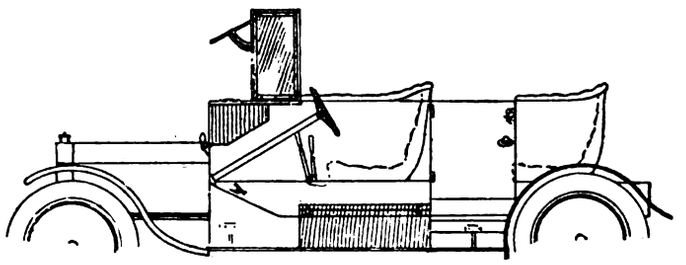
AN ORIGINAL TYPE OF CAR BODY.

An extremely original car drove up to our offices the other day, and Mr. John B. Campling, of 210 Piccadilly, London, W., the designer and patentee, was good enough to explain to us the ideas that had induced him to depart so completely from the hide-bound style of the average coachbuilder, says The (London) Motor. As a private user, driving his car himself and accompanied by members of his own family and friends, he was not content with the ordinary side-entrance body, and sharing in the general tendency toward high sides, he set out his requirements and sought to get the body made for a 16-horsepower Gregoire chassis that he had on order. Ultimately, after meeting with ob-



Body showing boot for spare wheel and baggage platform.

jections from various coachbuilders, he found that Messrs. Morgan & Co., Ltd., were willing to build to his requirements, and the result he brought to us for inspection. At first sight the effort was pleasing, perhaps because of the extreme simplicity and later, as the details became clearer and their merits were recognized, the effect became even more pleasing, and the impression that remains with us is, accordingly, a very good one. In the first place there is only one entrance door on either side, and that between the front and rear seats, access to the front seats being given by a narrow passageway between them. There is so much room that the objection which might be raised, that the occupants of the rear seat must be passed, is abolished when one has once tried the effect. The dashboard is elevatel because in the angle, formed by the dash and the upper line of the body,



is placed the gasoline tank (as indicated in the sectional sketch). A long side panel continues the lines to the back of the front seats, and the general level is continued through to the rotund body at the rear. The gear and brake levers are brought inside the body, so that a particularly clean exterior is given. The front seats are each wider than usual, because the body is not pinched in in front as is customary, and the passage only takes advantage of the space, which actually is never used for seating. The flat top of the gasoline tank is continued and is used as a table inside of the three-sided screen. The upper glass panel of the screen is hinged outward from above, and a roof is placed over the screen. This novel feature gives the car body its name, the Secretary body, and, if desired, a set of drawers could be carried under the table.

The angle of the sides of the screen is such as to deflect the air currents so that they miss the whole of the occupants of the car. No dust enters the car, and light rains are excluded. The Cape cart hood when extended (and this can be done from inside the car without the need for stepping out at all) goes over the screen roof, and when curtained in, the equivalent of a limousine is provided. Under the front seats space is provided for accumulators and small accessories and for a gasoline can, while under the rear seats (which, by the way, are raised two inches above the front seat level) is carried the Stepney wheel, which is withdrawn through the rear door of the boot, which extends rearward and provides a luggage platform. Tools and spares are carried in the capacious boxes on the steps.

The gasoline tank is filled from in front of the screen, and by a very clever arrangement the funnel is made to sink down in the inlet between two guides.

The high, smooth sides of the car do not give the impression of undue height because of the length of body, but on the other hand the car seems larger than is really the case.

HEADLIGHT TESTS.

Owing to the numerous objections raised lately by the public to glaring headlights on motor cars the Royal Automobile Club of England recently carried out a series of tests with the chief types of lamps. The results, summarized briefly, are as follows:

The best position for headlights is not where they are usually placed, four feet or so from the ground, but at a height of seven and one-half feet, while, curiously enough, a low position, two feet from the ground, is better than intervening elevations.

To avoid a wide dispersion of the beam of light a small source and a large reflector are required. Further, it is, in the opinion of the judges, a mistake to increase the pressure in an acetylene lamp, as the consumption of gas becomes enormous while the light is but little stronger. Nor should larger burners be used, as they merely increase the width of beam, and occasionally the glare, without any practical benefit.

Electric lamps are liable to be "overrun," which leads to blackening of the bulbs and premature breakage of the filaments. Finally, whatever the type of the lamp, attention must be paid to its tilt, as if inclined too much upward it dazzles observers, while diminishing its illuminating power.

DATES FOR FIRST ALLOTMENT AT LICENSED SHOW.

First allotments of space at the "Licensed" show at Madison Square Garden, New York City, are to be made on October 7, the necessary application blanks and diagrams already being in the hands of the prospective exhibitors. The exhibition is officially entitled the Tenth National Automobile Show, and it will take place January 8 to 15, under the auspices of the Association of Licensed Automobile Manufacturers. The gasoline cars shown will of course be restricted to the products of the members of the association. The general arrangements of the space are practically the same as last year, except that the elevated platform will be extended across the eastern end of the arena. The main exhibition hall will be given over to gasoline pleasure vehicles, as will part of the elevated platform. The exhibition hall on the Madison Avenue front will stage electric pleasure vehicles, while the basement will have a commercial vehicle section. Motorcycles again will have a section to themselves in the basement, while tires, parts and accessories will take all the remaining space in the basement, the elevated platform, the concert hall and the balconies, first consideration being given to the motor and accessory manufacturers.

Digitized by Google

ACCESSORIES AND THE CAR MAKERS.

Large production makers of cars are inviting quotations on accessories in such a way as to suggest the possibility that many cars are to appear heavily laden with attachments and fittings where in previous years they have been bare. Speed indicators, wind shields, fancy lamps, grade indicators, tops and similar equipment are receiving attention, and the concerns which produce these articles are being urged to name their lowest figures in large quantities. Superficially it would appear as though extra equipment was to be almost lavishly supplied by the automobile manufacturers, but the interest which they have shown in getting quotations has not as yet been followed by as many orders as the accessory people might reasonably expect after such symptoms.

In deciding what extras and accessories should be included with the car as it is offered by the maker to the public there is opportunity for the exercise of the highest qualities of business judgment, says The Motor World. Because of the difference between the retail prices of accessories and the prices at which large quantity buyers may obtain them it is possible for the car maker to appear highly generous at comparatively small expense. He can name the figure which would represent the total of what a retail buyer would have to pay for the articles and point out that for the car itself the net cost is in effect reduced by that amount, even while he would not be willing to sell the car alone at what he thus indicates would represent its net price. Extensive equipment also gives the salesman a splendid chance to dilate on the manufacturer's forethought and liberal provision, and there are many people who incline to the ideal of getting a machine that is complete in every detail without their having to bother to select and pay for a long list of extras.

But when a price has been set on a model and the car is designed to be attractive to the public at that figure the thought of giving free equipment on from 1,000 to 20,000 cars is one to make the manufacturer pause. When the cost of extra equipment for a single car is multiplied by the total number of cars which he will produce, the result looms so enormous that the computer grips his pocketbook and hastens to close the safe. Where a product is aimed at a certain price which will be so low in relation to the general size and character of the car that retail buyers will be struck with the sound of it, it may be the case that all the idea of giving equipment must be abandoned since the cost of the extras might be a large proportion of the profit margin and to raise the price by even so much as $25 or $50 would spoil the price slogan on which the selling campaign is based.

Nevertheless at the same time that a maker is taken aback by the terrific total which equipment for the whole output would involve, it should be remembered that the cars must be considered from the single unit standpoint and if the individual car is made more attractive as an offering, at a price which covers the accessories and still yields a satisfactory profit, the consideration of the total cost of the accessories is no objection to their purchase. If the manufacturer be inclined to brood over total costs he can worry himself sick in devising innumerable economies, from diminishing the number of nails used in cleating each machine for shipment, to omitting commas in the correspondence with agents to save typewriter ribbons.

Having arrived at the conclusion that equipment is desirable or necessary, the maker is confronted with the problem of how much equipment is necessary. Horns come first with lamps next, according to the general run, and then come the more intricate judgments. Not everybody wants a wind shield, and a speed indicator presents different degrees of temptation, while other accessories make appeal to only a portion of buyers and not to all. A top may add to much to the appearance of a car as to increase its selling value many times the extra cost, while a magneto is an item of recognized value in the mechanical make-up of an automobile.

Certain manufacturers have tried and are at present endeavoring to work out extrat profits for themselves by supplying accessories to their agents in a wholesale way, so that the customer purchases the extras from the dealer at the time he gets the car, instead of receiving them as a gift. In a sense, the car manufacturer thus becomes a jobber in accessories. By clever negotiation he may get a better price than is accorded the jobber and on the strength of his relation to his agents may sell to the latter at a lower price than the jobber could afford to do, or than the accessory manufacturer would quote to a dealer direct. This feature of the accessory end represents what corresponds with the "by-product" side to other industries.

As this latter possibility reveals itself to the accessory makers they are becoming wary in making their quotations, as whatever low figures they might name for equipping the entire output may be used as a club if the manufacturer is intending only to act in a jobbing or distributing capacity with his agents.

Whether the greater portion of the forthcoming cars are equipped or not, however, the accessory branch of the industry is bound to fatten and prosper. The car makers will adjust their prices and their suplies of equipment in accordance with their respective policies, but if the accessory people fail of manufacturers' orders they will have a correspondingly larger field of retail buyers to work on. The demand for accessories is positive and general and the manufacturers of cars are given the opportunity to use it in compounding the offerings with which they tempt the public, while the accessory maker has the choice of big quantity orders at small profit or of treating with dealers and owners at a better price.

Wants

SITUATIONS WANTED.

Wanted—Position by carriage painter. Experienced striper and finisher. Prefers job in small custom shop. Address Box 144, Jamestown, O.

Wanted—Position by trimmer, foreman or contractor. Can make good. Reference. Address "M. 62," care The Hub, 24 Murray Street, New York, N. Y.

HELP WANTED.

Wanted—Foreman painter, Canadian factory building 5,000 to 7,000 buggies and 3,000 cutters annually. State age, experience, salary and reference. Address Box 63, care The Hub, 24 Murray Street, New York, N. Y.

Wanted—Foreman for body and machine room in Canadian carriage plant, capacity 6,000 to 8,000 light wheel vehicles and 3,000 cutters annually. Must be a first class man, and one with some automobile body experience preferred. Permanent position and good salary to the right party. State definitely age, experience and reference. Address Box 25, care The Hub, 24 Murray Street, New York, N. Y.

Wanted—A first-class superintendent who has had experience in manufacturing vehicles in a wholesale way of a good, medium grade line of work, from 3,000 to 4,000 jobs annually. Address "Manufacturer," care The Hub, 24 Murray Street, New York, N. Y.

Wanted—Three more body makers on broughams. Riddle Coach & Hearse Co., Ravenna, Ohio.

Wanted—First-class working foreman by old established carriage and wagon manufacturers near New York; good treatment and future for the right man. Address confidentially "C. S. C.," care The Hub, 24 Murray Street, New York, N. Y.

Wanted—Salesman for New Engalnd. To sell wheels for trucks, wagons and carriages; also wheel material. State age, experience, present employment, references, salary. Address Box 142, care The Hub, 24 Murray Street, New York, N. Y.

Wanted—By carriage and harness firm near New York, bookkeeper and salesman, experienced in the line and understanding double entry. Married man preferred. Best of habits and reference absolutely necessary. Address "W. S. F.," care The Hub, 24 Murray Street, New York, N. Y.

FOR SALE.

For Sale—Rare chance for hustling young man. Carriage factory in live Michigan town; estate; 35 years; easy capacity 5,000 and more vehicles; good reputation; all machinery for making bodies, seats, gear woods, tops, dashes, etc., with patterns, tools, and everything ready to start next morning. Price, $10,000—would cost $40,000 to replace. Good place to make auto bodies, tops and trimmings. Town would help right parties. Address Box 84, care The Hub, 24 Murray Street, New York, N. Y.

Digitized by Google

TIMKEN ROLLER BEARING AXLES

BETTER THAN EVER

Because of the following improvements which greatly increase their value and efficiency:

NEW BOX of pressed steel with hardened cups inserted, insuring perfect bearing surface for rollers.

NEW CAGE which simplifies, insures perfect alignment and does away with small nibs on end of rollers, thus reducing liability to breakage under severe strain.

NEW ROLLERS, best quality nickel steel which gives greater crushing resistance than ever.

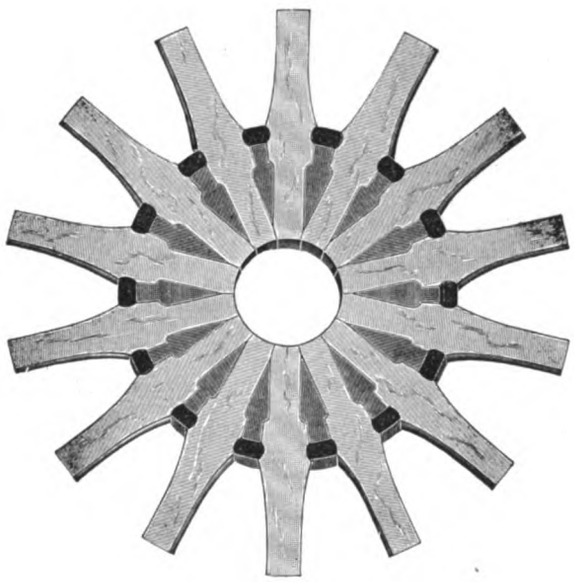
Every time you sell a vehicle equipped with TIMKEN ROLLER BEARING AXLES you add to your profits and make a satisfied customer.

SATISFIED CUSTOMERS ARE A VALUABLE ASSET.

TIMKEN ROLLER BEARING CO.

Branches
10 E. 31st Street, New York
429 Wabash Avenue, Chicago, Ill

Canton, Ohio.



The Reid Shell Band Wheel.

Prompt Shipments
Send for Catalogue and Price List

HIGH-GRADE VEHICLE WHEELS

Sarven, Warner Compressed Band Wood Hub

All materials are carefully selected and thoroughly seasoned.

UNION CITY WHEEL CO.

Union City **Indiana**

Digitized by Google

A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

Bolt Clippers
Everett, Mass., U.S.A.

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

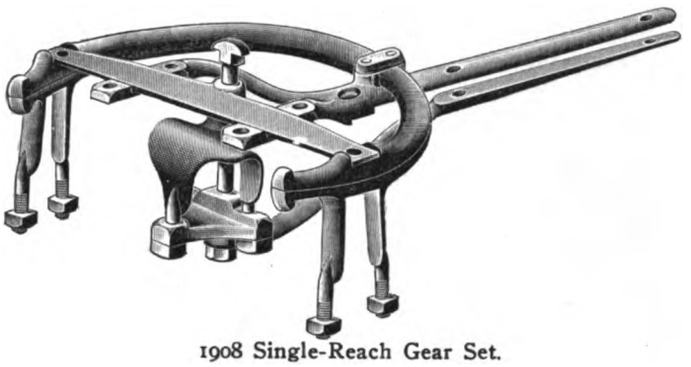
Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.
745 THIRD AVE., BROOKLYN, N. Y.

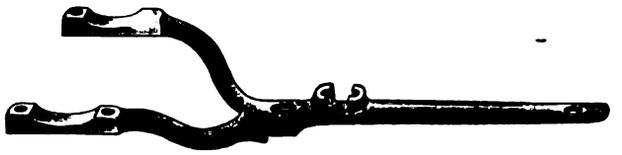
INDEX TO ADVERTISEMENTS.

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.



Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

Our Carriage or Spring Edge Cushion Frame

Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

NATIONAL SPRING and WIRE CO., ALBION, MICH., and ST. CATHARINES, ONT., CAN.

Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.

PATENTED DEC. 3, 1901

THE STANDARD BODY LOO

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the marke For further information, address

The KEYSTONE FORGING CO., Northumberland, P

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

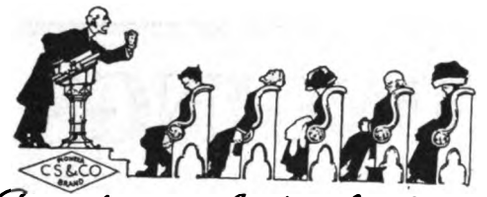
THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

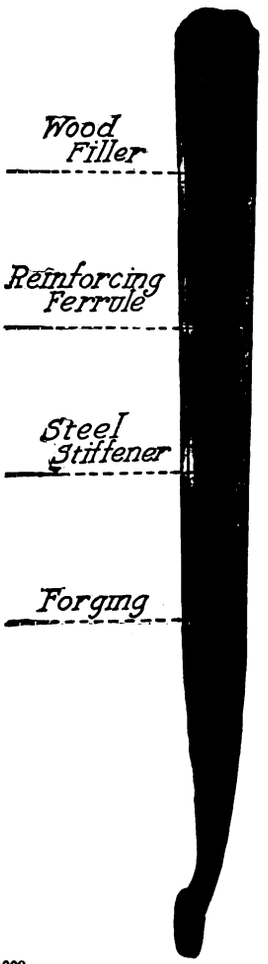
Please mention "The Hub" when you write.

Digitized by Google



A good example is the best sermon — Bill

TAKE "PIONEER" Bow Sockets, for example. No sermon needed when they are on a job. Their fine finish commands attention and that word "Pioneer" is a sworn statement as to what is beneath the glistening enamel.



Listen to these inside facts:

Tubes made from stiff, open hearth sheet steel and forgings from open hearth bars. Just putting these two together would make a socket above the average but not a "Pioneer."

In the small end of the tube is inserted a short inner tube; the forging then goes in and the three—forging, ferrule and tube—are welded securely together, thus stiffening and reinforcing the tube where the wood filler and the tube are small and where the socket gets the severest strain.

The fillers, of seasoned hard wood, fit the tubes snugly, and a heavy steel stiffener goes into the back bow.

The finish is two good coats of black enamel baked on by steam.

We furnish buggy sockets straight or offset to a nicety and can give best of service on sockets of special dimensions; also finished top joints to special dimensions, either full japanned or with brass-plated knuckles.

These sockets and joints are "Pioneer" quality and are made in

Binghamton, N. Y.

by

Crandall, Stone & Co.

1009

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.
Dalzell Axle Co., South Egremont, Mass.
Timken Roller Bearing Co., Canton, Ohio.

Bodies, Seats, Etc.
Woodman, Joel H., Hoboken, New Jersey.

Bolts and Nuts.
Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.
Wiese & Co., Wm., New York City.

Carriage Forgings.
Cortland Forging Co., Cortland, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.
Gifford & Son, John A., New York.

Carriage Goods.
Cortland Forging Co., Cortland, N. Y.
English & Mersick Co., New Haven, Conn.
Fairfield Rubber Co., Fairfield, Conn.
Gifford & Son, John A., New York.
Herbrand Co., The, Fremont, O.

Dashes, Fenders, Rails, Etc.
McKinnon Dash Co., Buffalo, N. Y.

Fifth Wheels.
American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Jacks.
Hankinson, J. V., Franklin, O.

Lamps.
Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Machinery and Tools.
Barnes Co., W. F. & John, Rockford, Ill.
Porter, H. K., Everett, Mass.

Miscellaneous.
Standard Oil Cloth Co., New York.

Props and Bow Sockets.
Crandall, Stone & Co., Binghamton, N. Y.

Rubber Tires.
Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Kokomo Rubber Co., Kokomo, Ind.
Swinehart Climber Tire & Rubber Co., Akron, O.

Shaft Couplings and Anti-Rattlers.
Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Metal Stamping Co., New York City.
Spencer Mfg. Co., Spencer, W. Va.

Springs and Gears.
Fitch Gear Co., Rome, N. Y.
National Spring and Wire Co., Albion, Mich.
Spring Perch Co., Bridgeport, Conn.

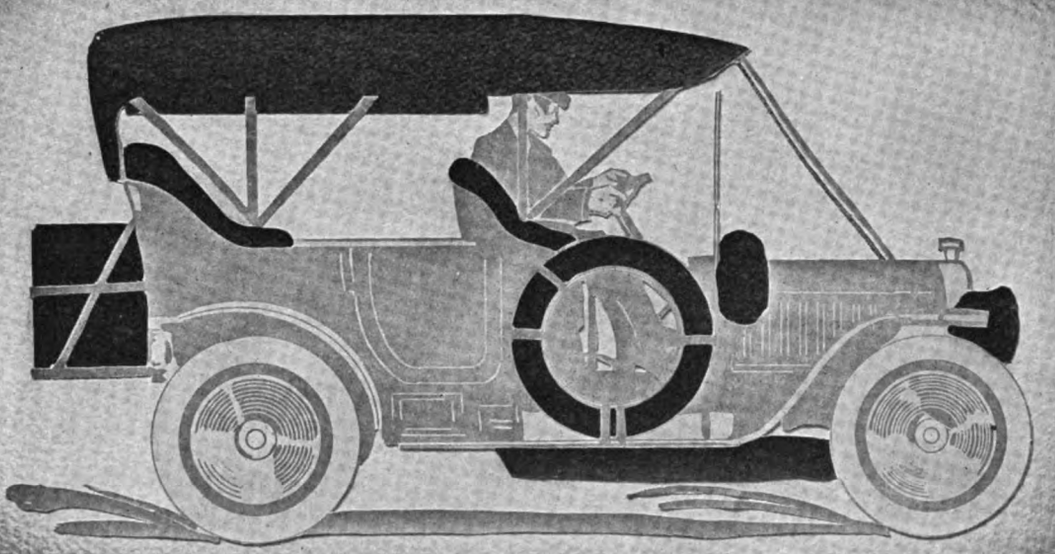
Trimming Materials.
Stevens & Sackett Co., New Haven, Conn.

Varnishes, Paints and Japans.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Masury & Son, John W., New York and Chicago.
Louderbach, A. E., New York.
Manders Bros., Wolverhampton, England.
Moller & Schumann, Brooklyn, N. Y.
Pierce Co., F. O., New York.
Smith & Co., Edw., New York.
Standard Varnish Works, New York City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

Wheels.
Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.
Union City Wheel Co., Union City, Ind.

Wheel Stock, Bent Wood, Etc.
Crane & MacMahon, New York.
Tucker Wood Work Co., Sidney, O.

Digitized by Google



MERITAS

STANDARD OTC COMPANY

FOR MODERN CARS AND CARRIAGES

¶ **MERITAS**, the Carriage Enamel Oil Cloth for storm aprons, buggy boots, tops, curtains and trimmings, used by vehicle builders who appreciate quality.

¶ **MERITAS** Enameled Duck, for the automobile accessories trade, auto trunks, tire cases, etc. Made in black and all the popular colors for the 1910 cars. (Sample book to the trade sent on request.)

¶ **MERITAS** head light and lamp cover material. Extra patent leather finish on tan back English Moleskin, soft and flexible yet strong and durable.

¶ **MERITAS** Enameled Muslins, Drills and Ducks for tool bags, mud guards, engine and gear covers, etc.

¶ **MERITAS** special upholstery Drills and Duck, the most satisfactory and lowest priced leather substitute for finishing seats, cushions, etc.

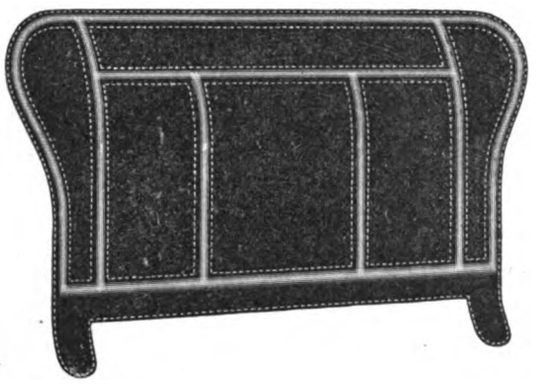
¶ Each one of these products is the best for its special purpose, the highest quality, most durable finish and the cheapest in the end.

¶ Look for this trade-mark stamped every yard on the back--it's your guarantee of quality.

MERITAS TRADE MARK STANDARD OTC COMPANY REGISTERED OIL CLOTH

Standard Oil Cloth Company.
320 Broadway, New York.

Digitized by Google



HIGH GRADE

Dashes and Fenders

THE INDIANAPOLIS DASH CO.

INDIANAPOLIS INDIANA

The MEYER THREADS and SILKS

Will Not Fade or Rot Like Other Makes

Used by the Best Carriage and Automobile Manufacturers Throughout the World.

Send for samples, gratis.

JOHN C. MEYER & CO., Mills at Lowell, Mass.

Offices: 621 Broadway, New York, N. Y.
77 Summer St., Boston, Mass.
Address all correspondence to our mills, Lowell, Mass.

HOTEL CUMBERLAND

NEW YORK

Southwest Cor. Broadway at Fifty-fourth St.

Near 50th St. Subway Station, 53d St. Elevated and all Surface Lines.

Headquarters for Carriage and Automobile Trade

Ideal Location, Near Theatres, Shops and Central Park.

NEW AND FIRE-PROOF

STRICTLY FIRST-CLASS

RATES REASONABLE

All Hardwood Floors and Oriental Rugs.

Ten Minutes Walk to Twenty Theatres.

Transient Rates, **$2.50** with Bath, and up.

Excellent Restaurant. Prices Moderate.

SEND FOR BOOKLET.

HARRY P. STIMSON, *Formerly with Hotel Imperial.*

R. J. BINGHAM, *Formerly with Hotel Woodward.*

The George R. Carter Co.

Manufacturers of

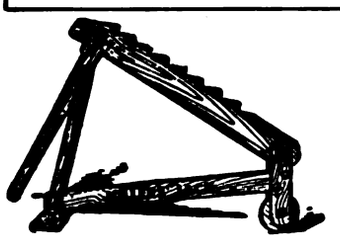
AUTO STRAPS A SPECIALTY

CRANK STRAPS, HOOD STRAPS, TOP STRAPS AND TOOL BOX STRAPS.

——— JOBBERS IN ———

TRIMMING LEATHER, TOP LEATHER, LEATHER CUT TO PATTERN FOR CUSHIONS OR TOPS,
SHAFT LEATHERS, SHAFT STRAPS, POLE STRAPS, ETC.

CONNERSVILLE, INDIANA.



Made in four sizes, Nos. ¾, 1, 2, and 3.

JACKS FOR BUGGIES AND WAGONS

Miller Patent Wagon Jack
Made by

J. V. HANKINSON,

Successor to THOS. MILLER,

FRANKLIN, OHIO.

Write for particulars and prices.

BOLT CLIPPERS

PORTER PORTER PORTER

EVERETT, MASS. U.S.A.

WM. WIESE
With Hardt, Von Bernuth & Co.
Since 1883.

WM. WIESE & CO.

ALBERT MAERTENS
With Hardt, Von Bernuth & Co.
Since 1894.

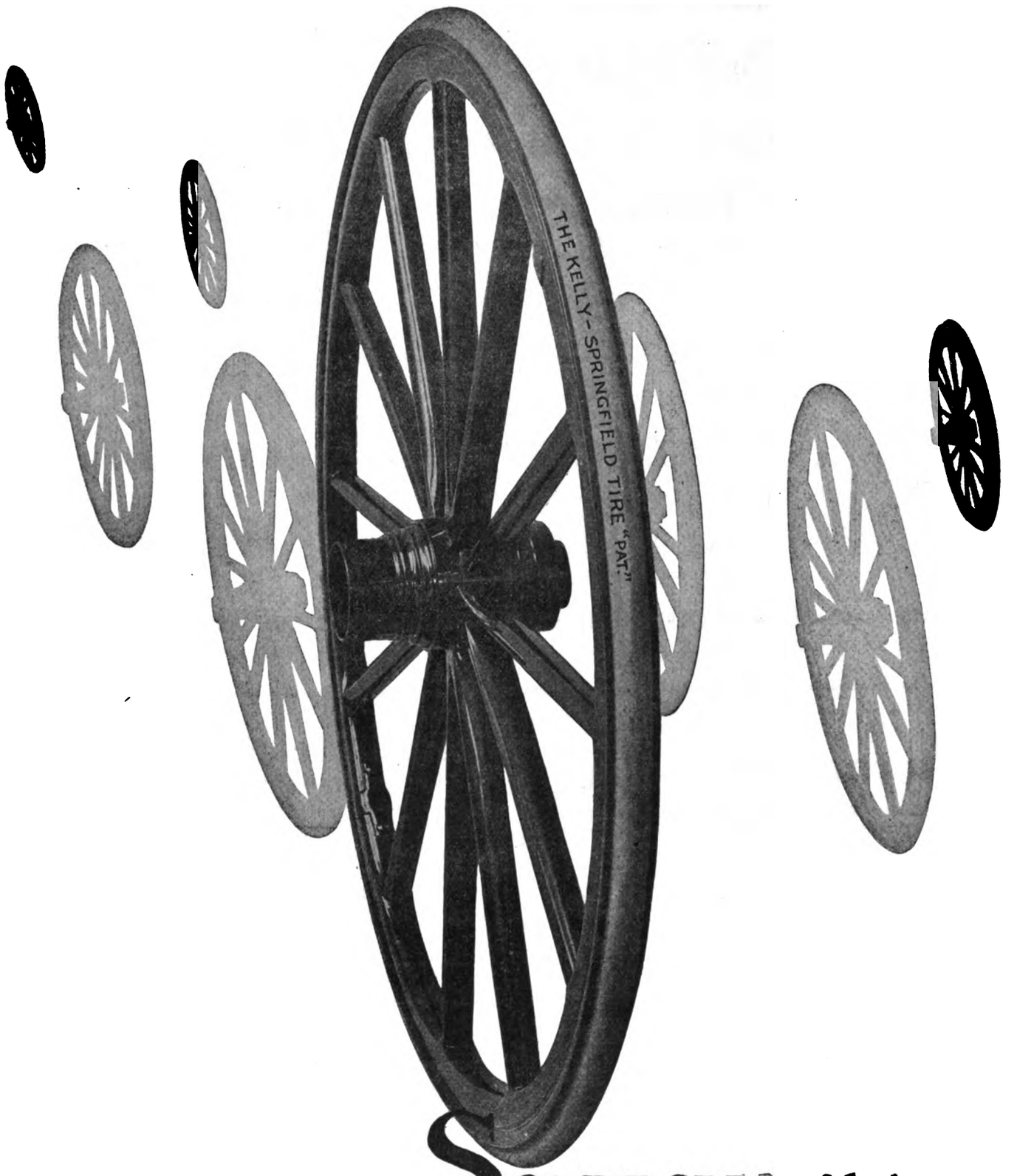
Formerly Carriage Goods Department of HARDT, VON BERNUTH & CO.

Carriage and Automobile Linings and Livery Cloths

Sole Agents in the United States for
WULFING'S CARRIAGE CLOTH AND EL DE BARAN GOATSKIN

66-68 Greene St., New Yrok

Digitized by Google



SOMEBODY said that you never know how good a thing is until you see the imitation. WE say you never know how bad its imitations are until you see the

Kelly-Springfield Tire

Digitized by Google

THE BRADLEY SHAFT COUPLING

OPEN

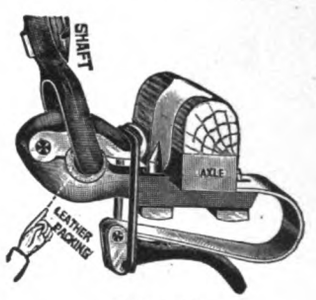
Ball Bearing, Leather Packing Automatic Take-Up

QUALITY AND ADVANTAGES CONSIDERED IT IS THE CHEAPEST AND BEST ON THE MARKET

ALL STEEL RIGHT THE TIME !

We are prepared to furnish the Buggy Size Shaft Ends with long length irons from 28 to 34 in. long, with 8 or 10-in. "T" piece, irons 5-16 x 1½ in. in section.

C. C. BRADLEY & SON, Syracuse, N. Y.



CLOSED

The Herbrand Co.

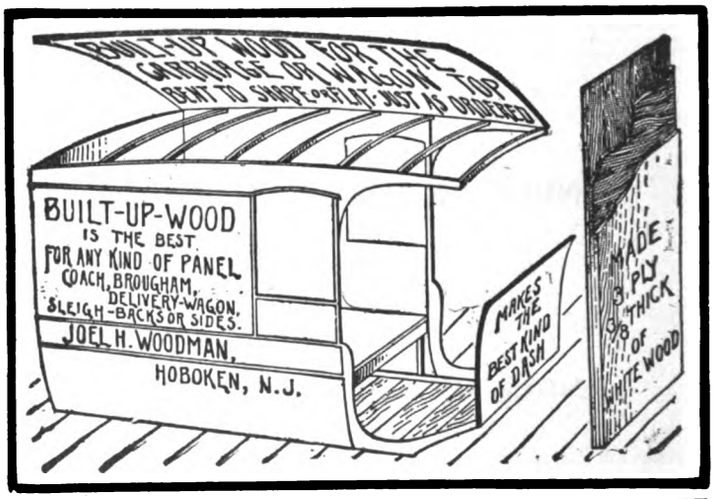
Fremont, Ohio

Manufacturers of

High Grade Drop Forged Body Loops

AND

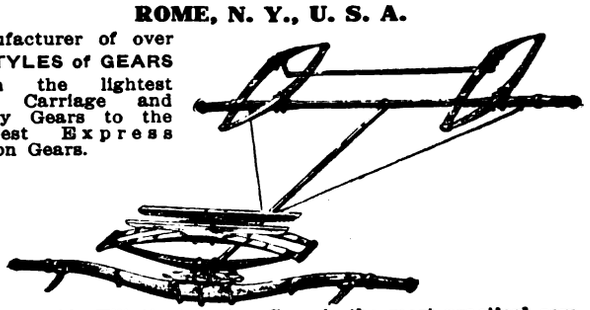
Bailey Hangers



FITCH GEAR COMPANY

ROME, N. Y., U. S. A.

Manufacturer of over **40 STYLES of GEARS** From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.



The Double Elliptic 3-Spring Gear is the most practical combination business and pleasure gear on the market, and is equipped with Wrought or our Common Sense Short Turn Fifth Wheel. **Send for our No. 24 Catalogue.**

Digitized by Google

JOHN A. GIFFORD & SON

(IN THE BUSINESS SINCE 1848)

AUTOMOBILE

Hardware, Forgings, Mountings, Trimmings, Etc., for the Carriage and Top Builder a Specialty

LAMPS, LAMP COVERS AND OIL CANDLES FOR ALL KINDS OF VEHICLES

We supply every want of the Carriage and Wagon Builder

40 years experience in the execution of orders for foreign shipment

Our Catalog of Automobile Specialties will interest all Builders

NEW YORK, U. S. A.

22 Murray Street **25 Park Place**

Digitized by Google

Eccles Ball Bearing Couplings

ALL OUR COUPLINGS ARE SHIPPED OUT WITH TWO PIECE BUSHINGS, FASTENED IN THE COUPLINGS

WHEN BUSHINGS ARE WORN OUT BY LONG USE, THEY CAN BE INSTANTLY REPLACED AND FASTENED INTO THE SOCKET BY OUR SPECIAL PROCESS

Patented Nov. 25, 1902.
Patented June 11, 1907.

THE SPRING IS PIVOTED AT THE FRONT SO THAT IT CAN BE TURNED OUT OF THE WAY OF THE WRENCH WHILE CLIPPING COUPLING TO THE AXLE.

No Lost Bushings when you Use Our Couplings

We Make a Full Line of Carriage and Wagon Forgings

RICHARD ECCLES COMPANY

Catalogue No. 15 is our latest

AUBURN, NEW YORK

The Fairfield Rubber Co.

Manufacturers of Carriage Cloth, Imitation Leather, etc. For Automobiles and Carriages

Fairfield - - - Connecticut

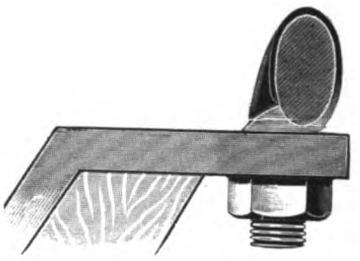
ESTABLISHED 1886.

Correspondence School of Carriage and Motor Carriage Drafting

A thorough, practical tuition is given through this correspondence school. The theory and practice of construction, bookkeeping, perspective. Many men now hold good positions through taking the courses of instruction.

Principal, THOS. MATTISON,
Hillside Avenue, Bitterne Park,
Southampton, England.

Author of "The Coach Body Makers' Guide," $3.00; a practical treatise on "The Suspension of Carriages," "Bookkeeping," and other carriage building works.

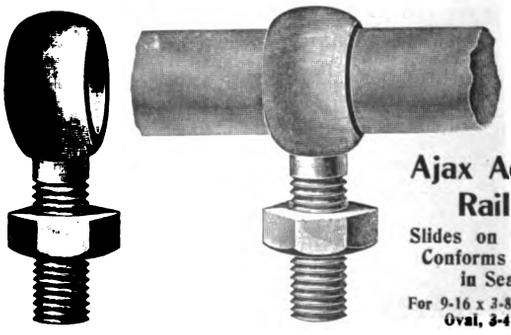


ALLEN'S ADJUSTABLE RAIL NIB

PATENTED

Readily Adjusted Absolutely Secure

For 9-16 x 3-8 Oval, 5-8 x 3-8 Oval, 3-4 x 3-8 Oval



Ajax Adjustable Rail Nibs

Slides on the Oval and Conforms to variation in Seat Irons.

For 9-16 x 3-8 Oval, 5-8 x 3-8 Oval, 3-4 x 3-8 Oval.

CORTLAND FORGING COMPANY

CORTLAND, N. Y.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

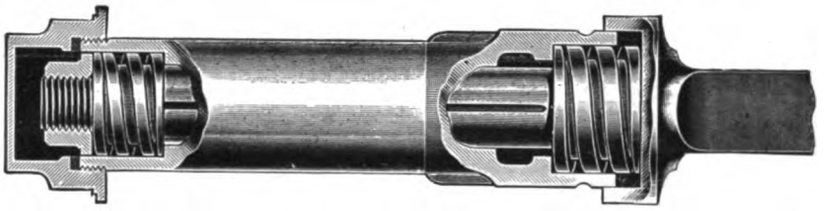
F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

C. T. RAYNOLDS & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

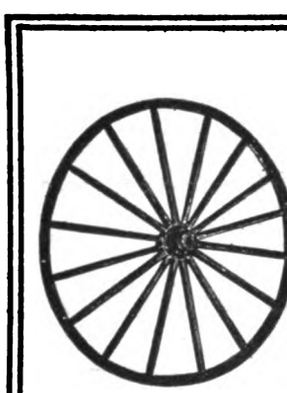
DALZELL AXLE CO., South Egremont, Mass.

BOLTS

Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.



Time Has Told the Story!

Service and satisfaction always follow our rolling stock

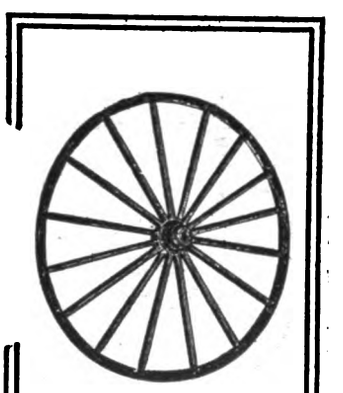
WHEELS

ALL KINDS—BEST QUALITY

Also RIMS and SPOKES

The Eberly & Orris Mfg. Co.

MECHANICSBURG, PA.



Digitized by Google

No. 263.

A LIGHT VEHICLE

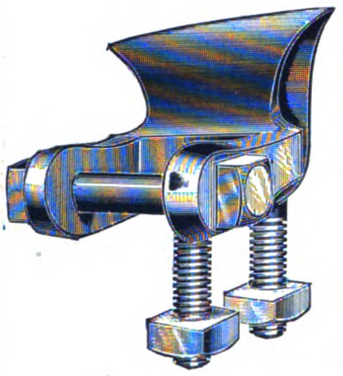
TO SELL WELL
MUST BE FITTED WITH AN ATTRACTIVE DASH.

Our No. 263 will please buyers.

A TOP RAIL WILL ADD TO VALUE
OF ALL DASHES.

McKINNON DASH CO.

Cincinnati, Ohio. Troy, Ohio. **Buffalo, New York.** St. Catharines, Ontario.



Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips ⅝ or ¾ width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

Catalogue "H" and Prices on Application.

COLUMBUS BOLT WORKS, Columbus, O.

USE KOKOMO TIRES

AND YOU WILL BE

SATISFIED.

WE MAKE BOTH

SOLID and CUSHION.

Kokomo Rubber Company,
KOKOMO, INDIANA.

Digitized by Google

The Hub

IN this number of The Hub will be found interesting reports of the annual meetings of two big trade organizations—the Carriage Builders' National Association and the National Association of Agricultural Implement and Vehicle Manufacturers.

Another November feature is an article setting forth the views of America's leading vehicle manufacturers on the future of the industry in its relation to the automobile. The builders declare prospects were never brighter than now. Read what they say.

Oldest Carriage Journal in the World

1858 1909

CURLEY-NY

Digitized by Google

Vol. LI. No. 8 NOVEMBER, 1909

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

RIGHT VARNISH MAKES
Satisfactory Vehicles

CARRIAGES. buggies and other vehicles that satisfy must not only be well made, they must also be **well varnished.** Your reputation and your profits depend upon the varnish you use. You can make no mistake by using STANDARD VARNISH WORKS' VARNISHES, they are the standard of excellence because they represent a **Unity of Color, Lustre, Working, Drying and Wearing Properties.** Of those not using these varnishes we ask for an opportunity to prove the validity of our claims.

STANDARD VARNISH WORKS

CHICAGO NEW YORK LONDON BERLIN BRUSSELS

INTERNATIONAL VARNISH COMPANY, Ltd., TORONTO, CANADA

CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

ESTABLISHED IN 1791

Wm. Harland & Son

Beg to announce that they have removed their United States Headquarters to Genesee Street and Erie Canal, Buffalo, N. Y.

Wm. Hraland & Son

IMPORTERS OF

Harland's English Varnishes

FOR

Coach and Automobile Builders, Railway and Street Car Finishing

AND MANUFACTURERS OF

High Grade Varnishes for all Purposes

FACTORIES:

MERTON, LONDON, S. W., ENGLAND.

GENESEE STREET and ERIE CANAL, BUFFALO, N. Y.

400 EASTERN AVENUE, TORONTO, ONTARIO.

Western Branch, 40 Dearborn Street, Chicago. C. H. Schooley, Manager.

General Manager United States and Canada, H. Hagger.

Please mention "The Hub" when you write.

Digitized by Google

JOHN W. MASURY & SON

MANUFACTURERS OF

Superfine Coach Colors and Varnishes

NEW YORK——AND——CHICAGO

C. A. WILLEY COMPANY

Color Grinders

AND MANUFACTURERS OF

SPECIALTIES IN CARRIAGE and CAR PAINTS, COLORS, Etc.

WILLEY'S SUPERFINE SPECIALTIES C COACH R COLORS TRADE MARK.

92d St. Cars at Hunter's Point Ferry Pass our Factory.

Hunter's Point, New York City

CALL AND SEE US WHEN IN NEW YORK.

Digitized by Google

1910 IMPROVEMENTS IN SWINEHART TIRES

MEAN MORE MILEAGE, LESS EXPENSE, NO DELAYS, DOLLARS SAVED

CONSIDER! Mr. Manufacturer, the advantages of our line before leaping into the uncertainty of 1910 season with an old-fashioned, inefficient, unimproved, inconvenient tire equipment.

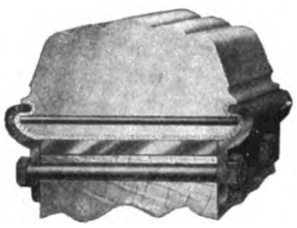
CONSIDER! Mr. Manufacturer, that truck owners in general are no longer buying tires because they are cheap.

CONSIDER! Mr. Manufacturer, that more Swinehart tires are used in New York and Chicago (the great commercial car fields) than any other make, because they give from 20 per cent to 50 per cent more service, and are more convenient to apply.

CONSIDER! Mr. Manufacturer, every time your customers are forced to lay up their cars for repairs to tires or renewals, it costs them from $10 to $50 per day, and consider that Swinehart quick detachable rims eliminate all such delays.

SAVE YOUR CUSTOMERS MONEY AND IMPROVE THE REPUTATION OF YOUR CAR BY USING SWINEHART TIRES

FLANGE RIM FOR WOOD WHEELS



The success of our quick detachable rims during past seasons has demonstrated that truck owners appreciate this feature.

Our clincher tires with improved quick detachable flange rims make it possible for an amateur to change tires in thirty minutes. The nuts on one side are simply taken off, one flange removed, old tire slipped off, new one put on and flange replaced. No tools other than wrench and a few bars required.

QUICK DETACHABLE RIM FOR STEEL WHEELS

The rim shown at left has revolutionized the truck tire business and demoralized competitors. It has placed the truck tire manufacture on the same high plane of perfection as tires for pleasure cars. This rim is furnished for all steel wheels.

Not only have our tires and rims been improved constantly, but facilities improved and capacity enlarged in order to meet the constantly increasing demand for our product.

MOTOR BUGGY SPECIAL

Expressly designed for motor-driven cars—not a tire for horse-drawn vehicles. Wide tread gives increased traction. Large size, beaded tread and concave sides add resiliency and durability. Made endless, no joints, easily applied by anyone.

The Swinehart Clincher Tire and Rubber Company.

Akron, Ohio

NEW YORK, 875 7TH AVENUE
CHICAGO, 1720 MICHIGAN AVENUE
DETROIT, 850 Woodward Avenue
ST. LOUIS, 2109 N. 9th
SAN FRANCISCO, 503 Van Ness Avenue
INDIANAPOLIS, IND., 809 Mass. Avenue

DURABLE **RELIABLE**

Mander's English Varnishes

MANDER BRO'S, Wolverhampton, Eng.

Works Established 1803

A. E. LOUDERBACK

Agent

118 Hudson St. New York.

CARPENTER-MORTON COMPANY

Sole Agents for New England

BOSTON MASSACHUSETTS

BRILLIANT **ECONOMICAL**

Digitized by Google

WHY VALENTINE'S?

Because --- Valentine's Varnishes excel in brilliancy, permanence of lustre, paleness and transparency, durability, working and flowing, thoroughness of drying and hardening through, depth and roundness of finish, and freedom from blooming or clouding.

Because --- Valentine's Vanadium Varnishes --- the most recent addition to the list—while especially adapted to the trying conditions met with in the varnishing of automobiles, overcome the same conditions when carriage bodies are exposed to them, therefore meet the exacting requirements asked of the highest grade of varnish.

Because --- Valentine's Colors, like the **VALENTINE** varnishes, are prepared with the aim of giving the painter the very best pigment he can use to produce the effects he demands. They have well fulfilled this need for years. **THE NEW COLORS** recently added to the list, are just what are required to meet the prevailing fashion in automobile painting.

Test and Try the varnishes and colors, and the reasons above set forth will become facts under the skillful manipulation of the master hand with the brush.

TRADE VALENTINES MARK

VALENTINE & COMPANY

New York Chicago Boston Toronto Paris London Amsterdam

82 Years' Experience in Every Can

E.S. 1827 & CO.

Edward Smith & Co.

CARRIAGE VARNISHES

Everything from the
Bare Wood to the Finishing Coat.

CHICAGO NEW YORK

HOTEL EARLINGTON

55 WEST 27TH STREET
Near Broadway, NEW YORK

This well known, absolutely fireproof hotel, after being entirely renovated, redecorated and fitted up complete with new plumbing has now reopened.

Rates from $1.00 and Up
With Bath, $5.00 and Up

Special rates by the season or year for permanent guests.
A special feature will be the cuisine, both in the dining room and in the new cafe for ladies and gentlemen. A la Carte and Table d'Hote.
Hotel under the management of

GUERNSEY E. WEBB
Formerly of the Ansonia.

RUB ——— RUB ——— RUB

THAT'S THE EXPERIENCE SOME PAINTERS HAVE WITH A POOR RUBBING VARNISH. THEY RUB TILL THEIR HEART ACHES ONLY TO HAVE THE VARNISH SWEAT, OR ROLL UP UNDER THE PAD.

XX Diamond Rubbing and Hard and Quick Drying Rubbing "A"

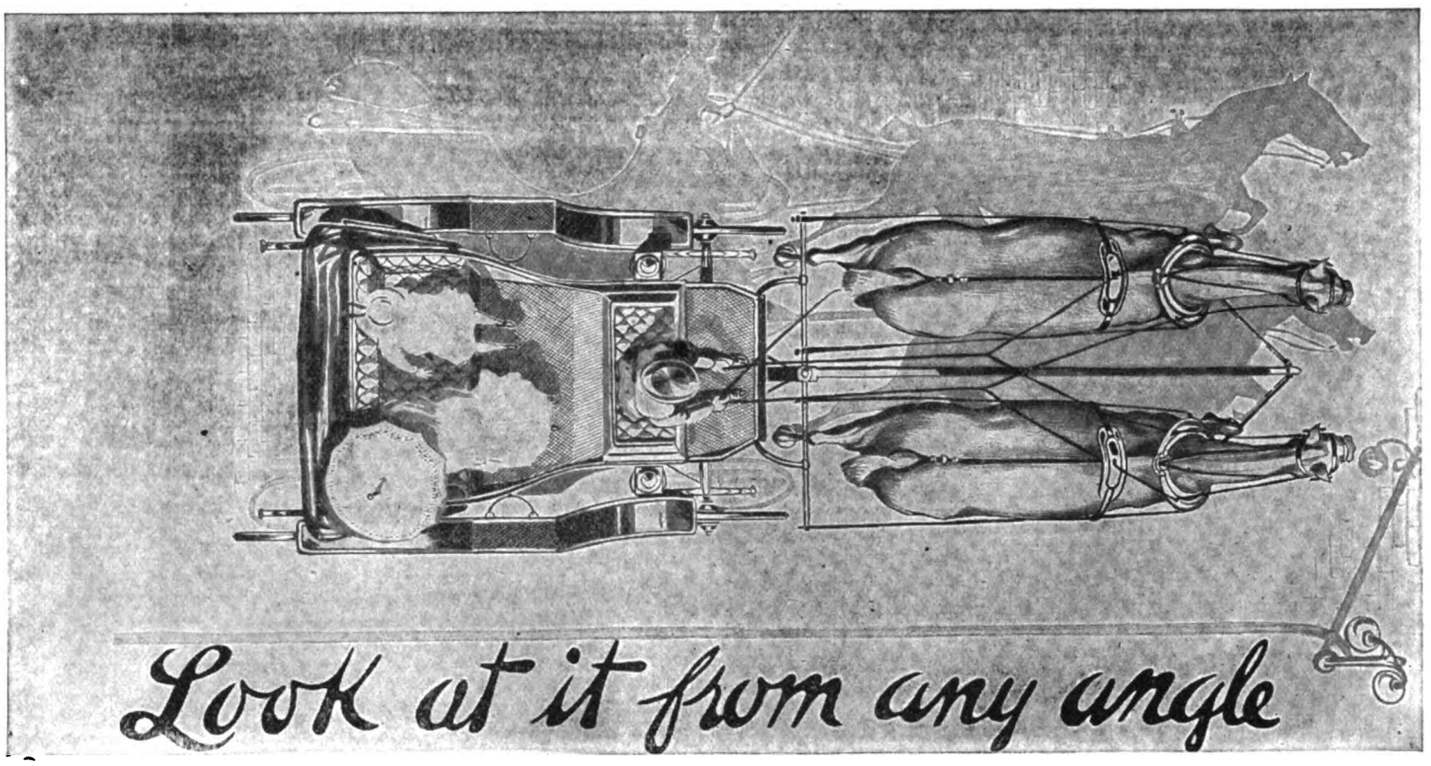
DRY HARD TO RUB IN TWO DAYS, WITHOUT SWEATING, ARE TOUGH AND THE BEST FOUNDATION FOR FINISHING COATS.

MADE BY **MOLLER & SCHUMANN CO.**

MARCY AND FLUSHING AVES., **BROOKLYN, N. Y.**

Please mention "The Hub" when you write.

Digitized by Google



DEALER AND CONSUMER LOOK AT THEIR PURCHASE OF

GOODRICH SOLID RUBBER CARRIAGE TIRES

FROM THE

ANGLE OF REPUTATION

The B. F. Goodrich Company has been long established and conspicuously successful in the manufacture of reliable Solid Rubber Carriage Tires. This is reassuring to the Consumer.

And it has made its methods of business eminently considerate of the Dealer.

ANGLE OF SAFE INVESTMENT

Dealer and Consumer appreciate the significance of a thoroughly definite and reasonable guarantee of manufacturing processes and materials. Such a guarantee goes with every Goodrich Solid Rubber Carriage Tire.

ANGLE OF UTILITY

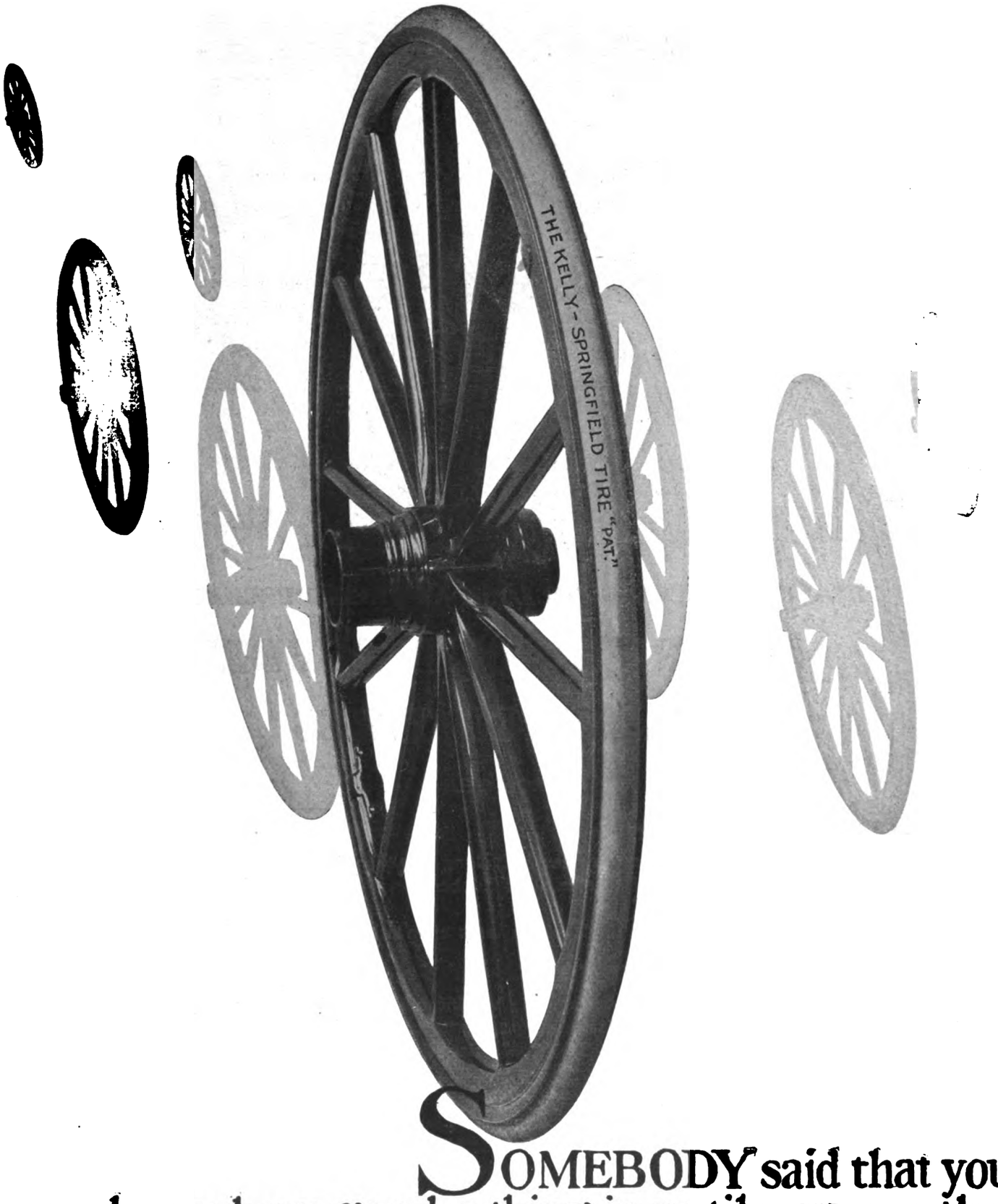
The Dealer will sell, and the Consumer will buy Goodrich Solid Rubber Carriage Tires; because the comfortable qualities—durability and resilience—are unquestioned. That is decisively determined by the Goodrich guarantee.

AN INTERESTING NEW CATALOGUE IS NOW READY.

THE B. F. GOODRICH COMPANY,

AKRON, OHIO.

Digitized by Google



SOMEBODY said that you never know how good a thing is until you see the imitation. WE say you never know how bad its imitations are until you see the

Kelly-Springfield Tire

Digitized by Google

The Hub

Copyright, 1909, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. LI. NOVEMBER, 1909. No. 8.

Annual C. B. N. A. Convention.

Interesting Speeches on the Automobile, Forest Waste and Freight Rates—Trade Situation Reviewed by New President, W. H. McIntyre.

One of the most interesting in its history was the Thirty-seventh Annual Convention of the Carriage Builders' National Association held at Washington, D. C., October 19-21. Splendid papers were read, and the committee reports went into exhaustive detail concerning all important problems of the trade.

The sessions were presided over by Maurice Connolly, of Dubuque, Ia., the first vice-president, and one of the features of the convention was Mr. Connolly's speech on the advent of the automobile. His remarks on this question appear in full in another column. Aside from advising high-grade carriage builders to engage in auto body construction, Mr. Connolly interestingly reviewed the good record of the C. B. N. A. on waterway promotion, forest preservation and other matters.

An entertaining and instructive feature was the illustrated lecture of Wm. L. Hall on forest waste. B. A. Gramm, of Bowling Green, O., described the building of a commercial motor truck, and advised vehicle men to engage in the business. To the lack of knowledge of factory costs was ascribed the low profits in the carriage industry by Charles R. Stevenson. There were several other interesting talks.

The annual election resulted in the elevation of Wm. H. McIntyre, of Auburn, Ind., to the presidency. H. C. McLear was again honored with re-election as secretary-treasurer, and it was decided to hold the 1910 convention in Cincinnati. The annual reports showed an increase in active membership of thirty-five and in associate membership of thirty-two.

Timber conservation resolutions were adopted, and the resolutions of the general shippers' conference opposing increased railway rates were endorsed. The Executive Committee found in the technical school a new field for designers and draughtsmen owing to the growth of the motor business. Other committee reports were thorough and full of information, especially that of the Freight Classification Committee.

THE OPENING SESSION.

The opening session of the convention was called to order by President Connolly at 10.30 o'clock Tuesday morning, October 19. He expressed regret that conditions at this convention were such that the exhibits were at one end of the city and the meeting place at the other. The Hon. Henry B. F. Macfarland, president Board of Commissioners, District of Columbia, was then presented and delivered the address of welcome, to which Charles P. Hull, of Indiana, responded.

Forest Waste.

An interesting illustrated lecture on the results of deforestation was given by Wm. L. Hall, assistant forester, of Washington. Mr. Hall said:

Forest bears a relation to other resources and to their dependent industries, which is entirely peculiar. If we speak of forest waste, we should bear in mind that our meaning extends not only to wood that is not used, but to soil which cannot be used, water which cannot be used, improvements which cannot be used, and even power which cannot be used, because of the misuse of that controlling factor, the forest.

Nature has placed the forest to a large extent upon mountainous or hilly ground. Most of the important streams have their source waters in high mountains, where slopes are steep, rainfall heavy and erosive action rapid. Without a cover of forest, such lands are washed bare of their soil. The forest is like a great

W. H. McIntyre, of Auburn, Ind.
President-elect of C. B. N. A.

spongy blanket spread over the entire watershed, its action sufficient practically to overcome all those influences which make for rapid runoff. Flood waters which originate on barren mountain and hillsides, carry away vast quantities of soil, estimated at from one to two billion tons a year. Silt which goes into the streams is the finest portion of the soil loosened from the surface of the fields where, by natural processes through thousands of years, it has been forming. The relation between forest and soil waste is easy to be seen.

Another effect of the misuse of forest is the waste of water through floods.

I want to make very clear this point—that when we misuse the forest we waste not only its own products, but also other very important resources. Nature has placed in effect a direct and

Digitized by Google

vital relation between forests and soils, and forests and streams, that must be heeded by man if he is to reap a full harvest from any of these resources.

It is of great importance to vehicle manufacturers, and to all wood-using industries of the United States, to bear in mind that our present imperfect use of the forest also causes great waste of wood itself, which is a most important material. This waste begins when the lumberman first sinks his ax into the tree in the woods, and does not end until the piece of wood is fitted into final form and goes into use.

We waste about two-thirds of the tree getting the other third into useful form. It has been the practice to leave a considerable part of the tree—and often times the very best part—in the stump. A lot of wood is wasted in the tops. Many trees are cut and felled, but never taken out of the woods, because they are in part defective. Yet they contain much sound wood. In the old white pine operations in Michigan and Wisconsin, only prime logs were taken. So many were left in the woods that it is possible, on many cuttings, to walk considerable distances stepping from one waste log to another. Lumbermen working these old operations during the past few years have found it profitable to take out a considerable number of those which still remain sound. Many logs are also lost. Some are left in the woods, but more sink in the streams. Probably as much as 25 per cent of the wood which is cut down in the forest is left there to decay.

There is also another form of waste which we ought to consider. The lumberman in going into the forest has taken only one or two kinds of trees. All the rest is left. In the Northern woods they took at first the white pine and spruce and left the hard woods. In the Southern Appalachians,, he took out the walnut and the cherry, and left the oaks and the chestnuts. I could point out extensive lumbering operations in New England to-day where, in order to get out the spruce for pulp and saw logs, all the hard woods on the mountain slopes are cut down and the spruce logs taken out full length over them. The hard woods are entirely wasted. The tops forming the so-called slash in the woods after lumbering get thoroughly dry in the summer and burn with intense heat when the first forest fire passes through the woods.

Total Tree Loss 68 Per Cent.

From one-third to one-half of the log is lost in slabs, edgings, trimmings, shavings and sawdust, and such waste easily represents 25 per cent of the entire tree as it stood in the forest. Further waste is entailed in working up lumber in the building trades, in box and furniture manufacture, in vehicle, car and ship building—in fact, everywhere sawn lumber is used. We must add to the 50 per cent of the tree left in the woods, and at the saw mill 17 or 18 per cent, which is sawn, planed and chiseled off in the course of manufacturing. This brings the total wastage where the tree is sawn into lumber, up to some 67 or 68 per cent.

It is estimated that in the building trades 15 per cent of the boards is thus lost; in furniture manufacture 30 per cent, in box manufacture 20 per cent and in vehicle and implement manufacture 25 per cent. The vehicle and implement manufacturers secure some material through wholesalers, but the larger amount comes direct from the saw mills in the form of rough plank flitches or small dimension stuff. The woods most commonly used in vehicle manufacture are hickory, oak, elm and yellow poplar, the very best woods of the country, and of them the very best quality is required.

It is a matter of common knowledge that the supply of every one of these woods is limited. The manufacturers are finding more and more difficulty in securing timber that will meet specifications. Just how much the available supply is of each of these woods we do not know, and the supply is so scattered that we shall probably never be able to tell exactly, but we do know that the supply is so scarce that the difficulty of securing acceptable material will constantly increase.

Two Things Necessary.

There are two things which ought to be done. The first is to reduce to the lowest possible minimum the waste which now occurs in fitting woods for vehicle uses. We can never do away with that waste entirely; but undoubtedly much of it can be overcome. At the present time we are working entirely in the dark. When a hickory tree is cut, it is sawn into rough boards, usually without any regard to the final form into which the material is to go. So far as our most valuable hard woods are concerned, such as hickory and ash, we ought to know, before the tree is cut, what kind of material it is going into, and it ought to be cut into the sizes that will most economically provide that material. We ought to go further than that, even. We ought to know the requirements of the different users of hickory and ash so thoroughly that we could tell for any given tree of a certain size, what material it can most economically go into.

The Forest Service has undertaken to get as accurate information as it can along these lines, in order that it may aid such industries as that of vehicle manufacturing, in putting their work, so far as it pertains to timber supply, upon a thoroughly scientific basis. It is now at work in a number of States, getting information from the wood-using industries, on the kind, amount and form of wood used. It is also getting the best estimates that it can on the waste which is taking place. This work will enable us to locate the point at which waste takes place, and I believe that with this information the Service will be in a position to greatly aid the wood-using industries.

At the present time there is no future hard-wood supply guaranteed in this country. The national forests of the West contain almost altogether soft woods. In fact, there are no hard woods to speak of in the Western States. In the Eastern States practically nothing has been done to safeguard and supply the hard wood timber. For ten years a movement has been on foot for the Government to establish national forests in the Appalachian Mountains, but nothing has been done. It is high time for this work to begin, both on the part of the Government, the several States interested, and such organizations as the Carriage Builders' National Association. I see no reason why this organization should not take the lead in a movement to provide for the future hard-wood supply. It is a matter of vital consequence to your industry, and it is a work which, if done, will bring the gratitude of an entire nation.

At the conclusion of Forester Hall's lecture on timber waste Maurice Connolly paid a tribute to the memory of President John Hassett, of Amesbury, Mass., who died during the year, and whom he succeeded as president. Mr. Connolly then delivered his address which follows:

President Connolly's Speech.

We have passed through many stages, and we have not interfered with any arrangements of the government at Washington. We have not tried to establish a table d'hote list of regulations in price and output, or any other lines of routine for the personnel of our organization. But we have without indulging in braggadocio accomplished one prime essential, the bringing together of the different elements of the craft into social concourse and to brotherly assemblies.

Following this accomplishment we have delved into many conditions vital to our industry and we have had committees on such important subjects as freight regulations, members who have sacrificed their time and their energies in an effort to bring the railway associations to an appreciation of what our industry demanded. There has never been a year in the various mile stones of our growth when our Freight Committee has not paid particular attention to our requirements, and I simply mention one instance when in a certain meeting of our Freight Committee their suggestions in that year saved the craft $1,000,000.

During this meeting of the Executive Committee I heard one of the members state that in the last years the efforts of our Freight Commission had saved the membership $1,000,000 on the item of timber alone. This branch of the organization has been very vigilant, and if we would with one fell swoop cut out all freight connections with this organization we would still be considerably ahead of the game.

But on top of this we have always been the blazers of the way and the original pathfinders on the lines of national conservation, including the preservation of the timber that we in our craft must use, as well as other products of our forestry.

Coincident with this we lend our influence and our efforts to the national movement of inland waterways and the development of natural arteries of commerce to the extent and scope of European waterways, where the great bulk of heavy freight and goods not needing quick transportation are taken care of by the facilities of nature. To my mind this is one of the great problems of America and as a freight proposition we cannot afford to view it from a selfish standpoint, but rather as a national economy which we must avail ourselves of. When we stop to consider the tremendous sums that have been expended in France, Germany and Switzerland in developing their great waterways under tremendous natural obstacles, and when we compare this expenditure with the tremendous freightage that floats on those streams, we cannot but ally ourselves in the cause of river and harbor improvements.

From the waterways we drift through our trade annals to the roadways of our country, and we wander back to the early days of our association, and we find that almost from the beginning the C. B. N. A. gave its imprimatur to the national movement for the improvement of roads.

Insurance and Timber.

For many years the committee of our association has given considerable time to the investigation of insurance conditions in our craft, and through careful elaborations of the necessities for a minimum insurance rate this branch of our organization has saved to the trade a great deal of money not only by their annual reports, but by private communication with individual

Digitized by Google

members, who suggested various inquiries to that particular committee.

As extensive consumers of timber products, and knowing full well the reason attending the same, we have given our influence and expert inquiry to the actual conditions existing to-day in the line of timber that we utilize; we have given an impetus to the national movement in this line, and we were among the first to induce a consultation about the capacity of our forests to produce our national requirements. We feel a certain pride in the attention that is now given to our Department of Forestry and Conservation.

In a large and wide sense including the builders of automobile bodies as carriage builders, we have a right as well as a fear in this matter of timber supply, because the expanding use of the limousine, landaulet and car town type of automobile each involves the use of so much timber that if we continue as in the beginning it will be but a few years when we must face a timber deficit.

The Carriage Builders' National Association and the technical school have been for many years almost synonymous terms, and perhaps while many of you have felt the insistent and constant touch of the Technical School Committee, if you will analyze the reason for its origin, and if you will impartially study the various stages of its existence you will find no regret for the tithes of your apportionment to its treasury, because from a simple institution it has developed men who have led the schools

Maurice Connolly, Retiring President C. B. N. A.

of grace, symmetry and proportion in the carriage construction of this country, and the lines of beauty that appeal to us to-day, whether it is horse-drawn or horseless, emanates to a large extent from those agreeable creations, those fonts of artistry that we established and we encouraged, and that we call the technical school.

The "Swan Song."

And now we turn to a consideration of the subject in which I am almost afraid to use the term of carriage, because in previous years we have always referred in a casual way to the experiment of automobile industry, but in this year of our Lord I feel in my position as spokesman for this day that we should be perfectly frank to the world and to ourselves and not allude to the approach of the automobile, but to quietly raise our hats and acknowledge that the motor car is not only with us, but on us.

In the last few months I have carefully canvassed the situation among builders of high-priced carriages, and I have yet to find one who admits that he will prosecute his industry during the coming year on the basis of horse-drawn vehicles alone, and so I feel that in this spirit of candor we should acknowledge the temporary reign of dementia automobilia and the fact that the class of people who would consider the purchase of our high-class vehicles to-day have drifted into the ranks of the motor driven.

There is almost an element of pathos in this declaration, because it spells the silence of so many wheels of industry; because it places the crepe upon the arms of so many giant elements in the construction of horse-drawn vehicles; because it signifies that at this particular meeting, unless all signs fail, and unless conditions rearrange themselves, that it is an opportune time to warble the swan song of the high-grade carriage builder.

It would not seem to me fair or honest if I did not urge all those whose money and energies are associated with the building of high-grade carriages to divert them to the new order of things, because my own experience and many consultations with those in my own particular line have forced me to the conclusion that for a time at least the people who can pay for the good things of our craft are buying creations that are self-propelled.

"Drift of the Times."

It is now up to all of us to ally ourselves in some way with the trend and drift of the times, and not fight against it, and right here I marvel that there are yet many institutions which have devoted themselves to the requirements of the old-time carriage builder.

I do not wish to be a forecaster or a horoscope of possibilities in this line, but I candidly think that any concern building an orthodox, standardized, high-class chassis and devoting its particular attention to carriage builders would find not only an easy channel of distribution, but a relatively profitable clientage. Ever so many builders of high-grade carriages who feel to-day in a numb and helpless condition, fearful of a responsibility and danger of a mechanical construction that influences the building of the car supply, and if there is no other message that reaches my auditors to-day I would feel well repaid for my feeble efforts if someone in this group took up the line of my suggestion and would establish himself as a benefactor of the old high-grade carriage trade, and incidentally "cop the coin."

It is not my intention to analyze the spread of automobilism, it is only to say that the fever is here. From a physiologic standpoint it is rather difficult to explain because when I review the list of old customers of mine I see so many who a few years ago would beg my pardon for not purchasing the products of our own factory, but would buy from us goods that we wholesaled or jobbed, explaining that they could not afford to pay the $100 or $200 difference that the investment involved.

Now this shows a certain candidness of people on a fairly good financial situation. To my own knowledge their material conditions are no better to day, and yet those same people who four or five years ago could not lose the opportunity of saving $100 or $200 on a vehicle purchase are in this year of our Lord bouncing blithesomely away over a matter of $5,000 or $6,000 before they own the car of their choice. This grave discrepancy in attitude is past my understanding upon the hypothesis that this pursuit of the self-propelled is a mild form of insanity, and that some time the spirit of economy will reassert itself, and that the people who cannot afford to own motors will hail the equine with the cheerful tune of welcome to our city.

There never was a meeting of this association when the basis and origin of our industry was so vitally affected as it is to-day by this vita nova. I ask for your careful consideration, and now I have touched upon the salient subjects of our order.

We have passed through a period of depression. Some of us still limp and halt as we go along; others such as the patient from the districts of Wall Street, who spent a year or so in the hospital, remind us of the school boy who pretended he was sick, so quick and sudden is the recovery of this same Wall Street. If all of the elements of our national life reflect the remarkable recovery that the stocks of this manipulated malestrom shows, how happy we all would be. A very short time ago common stock that many brokers and financial authorities said were worth nothing are today kissing the precincts of par. Mr. Harriman's Union Pacific, which a short time ago went begging around par, has in recent days touched 218, and the query of this marvelous mutation in this pool of speculation is, does it make for the betterment of general conditions in this country.

W. H. McIntyre Nominated.

Nominations for a new president were called for by Mr. Connolly immediately upon the conclusion of his annual address. The chairman of the Executive Committee, Mr. Wm. H. McIntyre, was named by Mr. Brunsman, and the nomination was declared unanimous. Committees were appointed as follows:

Resolutions—W. P. Champney, chairman; C. B. Hayes and Alfred Freschl.

Committee to Recommend Officers—L. M. Fitch, chairman; W. H. McCurdy, George R. Heylman, G. M. Hoffman and Edward Hughes.

Obituary Committee—C. E. Adams, chairman; Harry Ettling and E. T. Yarnelle.

Exhibits—O. B. Bannister, chairman; Andrew Kimble and E. W. Harral.

Digitized by Google

SECOND DAY'S SESSION.

The second session of the convention opened with comment by President Connolly on daily newspaper reports of his speech of the previous day. Mr. Connolly said:

Prefacing this meeting I wish to state that this morning someone drew my attention to a newspaper report of some remarks that I made yesterday. This report put a very wrong construction, at least upon my intentions, in discussing the advent of the automobile; because I referred purely to those who are in the same unfortunate predicament as myself, who have been building very high-priced, heavy carriages.

I don't think that any man in that position can successfully attack my statements; because I have canvassed the situation among men in that line very carefully and I simply alluded to a proposition and thought that they might profit if there were any custom builders here or people who expected to continue along the lines of the horse-drawn, high-priced, custom-built carriage, that they might glean something from my own experience and those that I have conversed with on this line, and save money that we have lost—for there is hardly a manufacturer in the country who has been hit harder on this line than myself, and I think I have to-day the biggest stock of heavy carriages in the United States, unsold.

Executive Committee Report.

The first matter of business following Mr. Connolly's brief speech was the presentation of the report of the Executive Committee over Chairman McIntyre's signature. The report is herein set forth:

After reviewing the benefits to be derived from membership the report endorsed the technical school in the following:

In the early days of the association there were, outside of a few factories, no skilled draughtsmen, and in the larger cities were mostly of foreign birth. Considering these conditions, the association organized and started the Technical School for Carriage Draughtsmen and Mechanics, so that there could be educated a corps of draughtsmen of our own countrymen who would be able to design and construct carriages equal to any produced in foreign countries, and made by our own people.

From this small beginning, in the short space of one generation, this association has not only made our trade independent of foreign draughtsmen, but has enabled the carriage builders of this country to produce carriages unsurpassed by any in the world for beauty and durability, so that to-day in the opinion of competent judges we hold the first rank in our line of business.

From the inception of this school until the present time it has cost the members of the association, with the help of a few hundred dollars from those not members, about $65,000. The money value it has brought in return is impossible to state, as it is incalculable.

New Field for School.

This school was needed when it was started. It was needed then, has been needed every year since, and is now more needed than ever before. The transition in part of vehicles, horse-drawn to those driven by motors, opens a field for the designers and draughtsmen greater than ever before, and these must and do come from this school, so that they can do for the motor cars what they have done for the horse-drawn vehicles. As the years roll on the money value of this institution to the vehicle trade will be counted in the millions. Has any other association done as much or is there any other association doing as much for the industry it represents?

The work of the freight classification was also endorsed. The report related how the committee acting for the C. B. N. A. prepared models and drawings showing the justness of the association's claims, and that they were reasonable and proper, and that the proposed increase in rates and classification was unreasonable.

After repeated conferences, says the report, the railroads adopted most of our recommendations, made but a few changes in our own classification and rates, and in this one effort soon saved to the shippers of vehicles and the buyers thereof enough money to pay all the expenses of the association from that day to this, besides placing this important matter for the first time in a satisfactory position.

The committee is still in existence and has reported its work to the convention every year, and an examination of these reports from year to year would, we think, convince any person that in this line alone the association has proved itself indispensable to the vehicle trade.

Growing out of conditions that it is unnecessary to state at this time, we thought it proper to aid in bringing the vehicle builders and vehicle dealers into a closer and more satisfactory agreement. To aid in this we appointed a Committee on the Abuses in the Carriage and Accessory Trades in hopes we could save the 99 per cent of honest dealers from suffering from the dishonest methods of the remaining 1 per cent, which was causing loss to both the dealers and the manufacturers. This committee has worked faithfully on these lines for some years, has awakened the conscience of both builders and dealers, and it is not too much to say that at the present time there is a better feeling between the builder and the dealer than ever before, and these two are working together better than before this committee was appointed.

It may be stated we proposed a strange method in trying to secure a better understanding between the manufacturer and the dealer, in proposing the abolishment of the guarantee. We did—the conditions required a drastic proposition as well as a drastic remedy, and the proposed abolishment of this warrantee. as it was popularly understood, would bring the whole matter up for discussion, as it did.

Debated and discussed in a fair and honest manner, the abuses were brought to the attention of the people in a way that was convincing, and an improvement so marked has taken place that we are justified in saying that the complaints are less in number than ever before, and that the relations between the two branches of the business were never better.

Support From Trade Journals.

We have had the support royally of the elegant trade journals in all the efforts we have made, through whose pages we have been able to reach many who are not members of the association. and to these our thanks are due, as without their aid we could not have accomplished as much. Then our associate members are equally to be commended for the work they have done and the help they have been to us.

The work ahead is as great as the work in the past. The new change in the propulsion, if it may be so designated, opens a much wider field for the vehicle builder. The vehicle "pushed from behind" is just as much a carriage as the one drawn by an animal, and is our business, and our people should take advantage of it at once. It opens a new field, the possibilities of which are limitless, and the years to come will call for many more vehicles than those that have passed, and it is now that all vehicle builders should cultivate this and take advantage of this opportunity.

The Executive Committee report then gave a synopsis of reports received from various cities as to trade conditions. The comments of the various manufacturers follow.

Trade Conditions.

A Georgian manufacturer reports that he built 2,000 jobs in 1909, and in 1910 expects to build 4,000 to 5,000.

A Massachusetts manufacturer reports that his business in 1909 was 70 per cent less than in 1907, and business of 1908 was 40 per cent less than 1907, and he is now forced reluctantly to the belief that the increased use of automobiles has permanently affected the use of carriages.

A manufacturer from Iowa reports he is building high-grade vehicles and his sales have been reduced and he doubts if trade in cities and towns ever comes back. Another manufacturer of high-grade vehicles in Iowa believes there is a reaction and that horse-drawn vehicles are going to come back again into favor, although acknowledging a loss of 50 per cent in his business the past year.

A Kentucky manufacturer reports his city trade seriously interfered with, but no diminution in his country trade.

A Michigan manufacturer states his 1909 output was 50 per cent less than his 1906 output, but thinks the outlook is good for 1910.

An Illinois manufacturer says the outlook for 1910 is good, and a 20 per cent increase this year over last.

A Virginia manufacturer reports a closer margin of profit, but better payment of accounts.

A New York manufacturer reports that present conditions indicate an improvement for those that stay in the trade.

A Georgia manufacturer reports the past two years the worst in his history, and the outlook not good.

An Ohio manufacturer says apparently the auto is superceding the buggy, surrey and some other styles of horse-drawn vehicles, and farmers are using the auto largely.

An Amesbury, Mass., manufacturer reports business in that town larger than ever in its history, with not over a half dozen carriage factories left, the others turning their attention to automobile parts.

An Ohio manufacturer reports he is compelled to pay higher wages owing to competition from automobile builders.

Kansas manufacturer says stocks in the hands of trade are low, and thinks the automobile business is largely the fault of this year's slow buggy trade.

Wisconsin manufacturer says the situation now is the same as following the panic of 1893; the American people buy almost wildly in prosperous times, and when a panic comes they find they have stock enough to last them for two or three years

Digitized by Google

without making any purchases; he calls attention to the fact that in 1897 there were 13,500,000 horses of an average value of $37, and in 1907, 20,600,000 at an average value of $95. These horses are used for plowing, cultivating, harvesting and other work purposes, and with horses on the farm, pleasure vehicles will continue to be a necessity.

Cincinnati manufacturer reports that on a trip to the western coast he found people apparently automobile crazy; did not see many machines, but the dealers seemed very much intersted in automobiles.

Another Cincinnati manufacturer suggests that there are so many old carriage men retiring from the field it ought to make the trade good for those remaining.

An Ohio manufacturer reports horses increasing at the rate of a million a year, with the demand for buggies shifted from larger towns and cities to smaller towns and the country. He makes, also, a strong plea for everybody to tell the truth.

The Chairman's Canvass.

The last Government report on the vehicle industry was in 1905. With a desire to get an expression from members Chairman McIntyre, of the committee, addressed inquiries to 274 in number and received answers from 89.

Of this number, he says, 41 report a satisfactory outlook, 18 an unsatisfactory outlook, and 30 are non-committal; 38 report they are building automobiles, 7 have discontinued building horse-drawn vehicles; 6 are building automobile bodies, 4 will build electric cars.

This report is not satisfactory, he declared, owing to the small number of answers received.

Through an accessory manufacturer to the carriage trade I have been able to get some statistics. The source of this information I am not at liberty to divulge, but the information at hand states that there were manufactured the past year pleasure vehicles, which would include surreys, to the number of 520,000. This exceeds 1908 by 90,000.

And now I come to a part of my report that I wish might be left out. But my duty to the association, my official connection with it, and my personal feelings as a man, demand that I speak out in no uncertain tones concerning a practice that obtains with a few—I am glad to say a very few—of those who are benefited by this association.

It is with hesitancy that I speak, but, like the surgeon who sometimes has to cut deep in order to remove the poison, I feel that the time has come for some plain speaking concerning those who, while withholding their support, even in the slightest measure, do not hesitate to criticize, and even sometimes antagonize the work of the association.

There is an old fable that a yellow dog barked at the moon, howling dismally every night, keeping up his howling month in and month out, and yet as the fables go, the moon still kept on shining.

It has been the policy of the officers of this association to keep steadily on with the work entrusted to them, ignoring the knocks, the criticisms and worse, that have hindered the work, but I for one can no longer stultify my manhood under the unjust lack of co-operation and actual antagonism of those who—pardon the phrase—are nothing more nor less than sponges, deriving every possible good they can from the hard work and the friendly co-operation of the membership at large, and in return giving no help, but in every way possible apparently determined to hinder the work, going so far as to appear in print in the columns of publications that are avowedly unfriendly to the work of the association.

Critics Absent.

Unfortunately, it is not only possible, but extremely probable that the ones affected by these remarks are not before me as I read this paper; for I have noticed that those who criticize, those who withhold their co-operation, those who—God pity them—antagonize our work, are those who very rarely attend any of the conventions and who practically know nothing of the work of the association, except as they imagine it in their own minds or hear it from others.

Support your association. Aid it in every way possible, so that as the future unfolds the possibilities before it we will be able to render even more assistance than in the past and spread the good to all the people who think ten dollars is too much for being benefited when they can get results of the association's work for nothing.

The Executive Committee report was accepted as read, and the convention then listened to an interesting address by B. A. Gramm, of Bowling Green, O., on "The Evolution of the Motor Vehicle Relative to the Wagon Builder." Mr. Gramm said:

Group of Officers and Members C. B. N. A. at Washington.

Mr. Gramm On Motor Trucks.

We all have to admit that the coming of the motor industry has affected the carriage and wagon builder more than any other line of business, and it seems to me—and has since ten years ago, when I first went into the business—that the carriage and wagon builder was really the man to have taken hold of it, and we certainly regret that he did not; but it is not too late at the present time.

So, in taking up my subject, I am not going to dwell very much on the pleasure end of it, as that is not my specialty. I have dealt entirely with the business end of it feeling that in the end there would be more business along that line and it would be more enduring; that is, the competition would not be so keen in it, and the business man could have more benefits from it without the struggle that would come from over-production.

Every progressive business man is becoming every day more interested in the modern method of delivery, namely, by motor instead of horses, but in taking up the subject of a motor truck or a motor delivery car, the fact that you invest in one does not say that you have decreased your expenses, for on the other hand, you might greatly increase them, owing to the fact that in every new departure there is more or less of an experimental nature connected with it until it is brought down to a high state of perfection.

There are some truck builders in this country, who have devoted a great many years to this subject, and who, to-day, are placing on the market trucks well worthy of a business man's investment, but, on the other hand, the moment success crowns

Digitized by Google

their efforts, there are a lot of concerns who jump into the business, thinking all they have to do is to start where the other fellow left off, and the result is they are soon in a lot of trouble and their customers as well.

Many a mechanic will tell you it is no trick at all to build a motor truck, and I believe there are a lot of wagon builders before me who think that it is not any great task to produce one. I thoroughly agree with you that any ordinary mechanic can buy a motor, a clutch and a transmission from some mail order house, and, with a lot of blacksmith work, he will eventually get something together that is propelled by its own power, and he has produced what he calls a motor truck and it actually will haul goods, but, gentlemen, that is the first step in pioneer work. A motor truck that has ample carrying capacity, that will stand up under the service for which it is intended, every day in the week, and every week in the year, no matter what the weather conditions may be, and do it without getting out of fix or needing unnecessary repairs, is another point.

Furthermore, you will agree with me that economy must come foremost from its use, and, therefore, its construction and design must be well studied. Another extremely essential point, one which very few designers have paid very little attention to, is the fact that every part of that chassis must be so constructed that any one single part may be taken off of it without interfering with or having to tear down any other part.

Building the Vehicle.

Mr. Gramm then entered into a discussion of the proper construction of the commercial motor wagon. He said:

The power should be through a four-cylinder motor. Some manufacturers who are not using four-cylinder motors will no doubt state that I am knocking their business. I am not. I say four-cylinder motor because I believe it to be the best and most economical type of commercial work. This motor must be thoroughly constructed and not be of too high speed. The bearings must be large and ample, fr this motor will be worked for long hours and steadily. The oiling system should be internal. It has been found impracticable to use pipes running over the motor with separate oiler, on account of the vibration breaking the tubes loose, burnt out bearings being the result. The oiling system must be cast integral with the crankcase, and a thoroughly reliable gear pump operated direct by either spur or bevel drive.

The transmission of a truck or delivery car must be very large and ample, and I stand absolutely for a double side chain drive. A solid rear axle means strength, with simplicity of parts, and two flexible chains mean that the constant vibration will not produce trouble in the axle. It should be of good dimensions and properly constructed, and, while we are talking axles, I am thoroughly convinced that I-beam axles are not suitable for commercial cars; solid section axles, made amply strong to carry the load without perceptible deflection under the most severe strains, should be used. The transmission should be combined in one case with the jackshaft, which houses your differential gear, and this differential gear should be made of the very best of chrome nickle steel (German preferred). This transmission ought to be mounted on a three-point suspension, which will do away with all torsorial strains, thereby causing no friction.

Axles and frame construction and springs have to be a great deal stronger than for wagon work, for you all know that the wagon gear does not have to carry any machinery to propel it; the motor truck does, and is run at a much higher rate of speed.

I find in truck construction that the carrying capacity should be about the same as the weight of the truck. Wheels have to be much stronger and tires much larger and heavier than wagon sizes, and there is a certain point in the height of the motor truck wheel that you will find we cannot go beyond for thorough satisfaction. We also know that a high wheed will roll over the ground much easier, and many of you wagon builders, no doubt, wonder why we do not use a great deal larger wheel. If you use too large a size wheel, your gearing has to be of such high reduction that you are sure to get into trouble from it.

Value of a Good Clutch.

There is one vital point about the construction of every truck or delivery wagon, and that is the transmitting of the power of the motor through the transmission to the rear wheels, which is done through the use of a clutch. There are many types of clutches. Clutches that are very good indeed in machine shop practice would last a very short time in truck service on the roads and streets. I found years ago that the reason why the tires wear out so rapidly and transmission gears have trouble, engine crankshafts snapping off, chains breaking and shafts twisting, came through the sudden application of the power when throwing in the clutch.

You will agree with me, if you can go to the business man you have been building wagons for for years, and say to him, "I can sell you a truck that will easily take the place of from two to three of your teams and do it at the expense of maintaining one team, and I can guarantee the life of from three to five years in its vital parts," you have immediately attracted the attention of that business man and he will become interested at once.

We have arrived at that state of development to-day, and I think that the motor truck manufacturer and the wagon builder should go hand in hand in this business. You are the men that can place the goods to far better satisfaction in the way of salesmanship than we can. You know your customers and know what they want; you have had their wagons brought back to you for repairs, you know their uses and abuses, and if you can satisfy yourself in the selection of a motor truck chassis that will stand up and do their work, you know you can easily get your customers' trade.

The report of the Committee on Good Roads was read by Charles R. Stevenson. It reviewed the added expense of delivery caused by poor highways, and recommended continued activity in the interest of better roads.

Report on Timber.

The report of the Committee on Timber Supply was presented by O. B. Bannister. The chairman said that he was under great obligations to the Forest Service of the Government for permitting the use of an advanced typewritten copy of the "Commercial Hickories of the United States" as prepared by Anton T. Boisen, forest assistant, and J. A. Newlin, engineer on timber tests. These excellent papers, summing up as they do the conclusions of the studies of the Forest Service up to this time, are the direct results of the influence of the National Hickory Association upon the Forest Service. The Forest Service, in making these studies, has conferred a lasting obligation upon the vehicle industries of the world. These papers will be printed by the Government in bulletin form some time in January. When they are so printed, a copy should be obtained by everyone interested in the preparation of the vehicle industry.

The report then went on to say that as a result of Federal research vehicle builders now know that they are consuming and wasting in one year the growth of three years. They know that there is no substitute for hickory and that the carriage industry, as now conducted, is absolutely dependent upon a supply of hickory. They can figure with a reasonable degree of correctness the amount consumed annually by each industry using hickory, and know that a wonderful unnecessary and inexcusable waste has been going on, chiefly because of ignorance and prejudice.

Further the report declared that there is being consumed annually approximately 350,000,000 board feet of hickory. We have been wasting 40 per cent more than this—say 150,000,000 feet. Should we continue the consumption at this rate, and the waste at this rate, it is conservatively estimated that the entire supply would be exhausted within fifteen to twenty years. We have already received some benefits from the economies that have been adopted by utilizing some of the timber that has heretofore been thrown away. You as carriage manufacturers are receiving this year, in price of your goods, the benefit of these economies.

There is still great room for improvement, and it is my opinion —and this must be understood as being my opinion only—that, if all the advantages of all of the economies that can be introduced are taken by the producers of these goods, the supply can be continued almost indefinitely, as I believe that it would be possible to so regulate the matter that the supply—that is the annual increment—would equal the demand, this is provided the vehicle industry of the future does not exceed that of the past.

It may be necessary—and indeed it is quite probable—that a greater price will have to be paid for this material. The cost, however, is a matter that should not alarm anyone. If all the unnecessary wastes are cut out of the problem and the most economical basis of handling is established, no one will then hesitate to pay the necessary additional cost to secure the material.

Industry Not Declining.

Will the present demand for vehicle carriage woods continue? Is the vehicle industry a thing of the past? These are questions hardly within the province of this committee, and it is not our intention to discuss them. If we were to stand in front of the Annex Hotel, Chicago, or in front of the Waldorf, in New York, and see the automobiles pass by on Michigan Avenue and Fifth Avenue and would confine your observation to these points only, you would conclude that the vehicle business was indeed a thing of the past; but should you go on to the wharves of New

Digitized by Google

York City, or in some country seat in Tennessee or Kentucky on some "first Monday," you will have a decidedly different opinion.

I only wish to say, for your encouragement in this respect, that, from information in my possession, I believe that there has been made in the United States, from October, 1908, to October 1, 1909, not less than 1,500,000 spring vehicles, an increase approximately of 15 per cent over the same period of 1907-8 and a decrease of approximately 10 per cent during the same period in 1906-7.

All of the information that can be obtained has not yet been secured to substantiate these figures, but they are reasonably correct. It is quite evident, therefore, that it will be some time before the automobile business will entirely supplant the vehicle industry. It is, I think, a very conservative estimate to state that there will not be made in the year 1909 to exceed 150,000 automobiles. Personally, I believe that this estimate is at least 25,000 too high. If these estimates are correct, the number of automobiles made is not to exceed 10 per cent of the number of vehicles made within the same period. How soon this order may be reversed, if ever, I will not assume to say.

A Talk on Lack of Profit.

Following the report on timber supply, Charles R. Stevenson, of New York, delivered an address entitled "One Reason for the Inadequacy of Profits in the Carriage Industry." He said among other things:

Basing my opinion on a wide acquaintance among many manufacturers in various lines of stable industry, I should say that a normal profit of 12 per cent to 15 per cent on the year's gross business should be considered an adequate one. This, in view of

Henry C. McLear, Re-elected Secretary C. B. N. A.

the relation between the capital involved in manufacture and the amount of business done, should represent a return of from 16 per cent to 20 per cent on the capital invested.

Deducting from this 18 per cent or 20 per cent, the 6 per cent which capital can earn in an unaided way through natural investment channels, we find that an additional return of about 12 per cent should be secured in return for the risk which is taken and the extra energy which is applied by the man who devotes his capital to an active manufacturing business.

I believe, judging from the conversation which I have held with a large number of the individual carriage manufacturers throughout the country, that a general impression exists among the trade that the profits are inadequate. It is rare that a general impression of this sort is found without there being some definite ground therefor.

Reporting on the condition of the carriage industry for the year 1905, the census bulletin shows the total capital invested in the industry amounted to $126,320,000. The total value of the product was $125,332,000. To manufacture this output the carriage manufacturers spent $5,209,000 for salaries, $30,878,000 for wages, $10,182,000 for miscellaneous expenses, including taxes and insurance, and $61,215,000 for material, including fuel and supplies.

A comparison of the total of these figures with the selling value of the output would not, however, enable us to arrive at the profit of the industry as a whole, for these figures do not take into account two very important items in the cost of your product, namely, the depreciation on your plants and the cost of selling.

Allowing for 5 per cent depreciation on buildings valued at $23,186,000, and 10 per cent depreciation on machinery valued at $11,785,000 employed in the industry, we find that the total depreciation chargeable amounts to $2,336,000.

Figuring our selling expense as 7 per cent of the sales, we find that the cost of selling the product for the year 1905 was $8,773,000.

Adding these two items to the other cost items already mentioned, we have a grand total of $118,626,000 required to produce an output valued at selling figures of $125,332,000. This shows a profit of $6,706,000, or barely 5.3 per cent profit on the total sales for the year.

Surely you will concede that this is absolutely and completely inadequate.

Cost Ignorance at Fault.

Having proved the existence of a condition, let us seek to discover why this condition exists.

It exists, primarily, because you gentlemen are not getting enough money for your product. Your selling prices are to low. Much of your goods is, as we all know, sold at an actual loss rather than at a profit.

Why is this so?

There is just one reason. You do not know what your goods cost you to produce. On what authority do I venture to make this statement? On careful investigations of a large number of the leading concerns in the industry made by myself and the staff of our organization. Concerns whose methods are typical of those employed in the industry as a whole. As a result of these investigations we found that an estimate made at the beginning of the season is the only form of information which the great majority of you obtain. That the method of making these estimates is entirely wrong in the method of distributing the large item of general or overhead expense over your product. That no actual costs are obtained showing the true cost of the goods made under the conditions actually prevailing at the time of their manufacture. That your actual profits for the year so seldom check with the profits which you have calculated for is a further proof of the inaccuracy of your methods.

The condition which confronts you is, in my opinion, vital. The remedy is plain—know your costs.

I have not attempted, and will not attempt, to go into a detailed discussion of the methods by which these costs may be obtained. I have already done that in an address which I presented before the Cincinnati Carriage Makers' Club last March, a copy of which I should be glad to send to any of you who are enough interested to write to me for it.

The Committee on Fire Insurance, through A. G. Brunsman, presented its report, recommending that members acquaint themselves with the conditions of their factories, making personal inspection of entire premises at least once a week and heed suggestions offered by representatives of insurance companies and local agents regarding betterments of risks.

Report of Secretary-Treasurer.

The report of the secretary-treasurer for the period January 1, 1908, to January 1, 1909, was presented as follows:

Receipts.

Cash in bank January 1, 1908	$2,822.15	
Receipts during the year from dues, fees and other sources	6,948.77	
Contributions for school	2,211.64	$11,982.56

Expenses.

General expenses	$7,845.32	
Paid for the school	2,064.84	
Balance in bank this date	2,072.40	$11,982.56

We also have a bond of the Chesapeake & Ohio Railroad Co. for $1,000.00, held for the benefit of the school.

In accordance with Section II, of Article 2, of the By-Laws, we report the following new members in 1908:

New Active Members.

Vincent Bendix, The Bendix Co., Cragin Station, Chicago.
Charles E. Brettle, Dinigen & Neilson, Brooklyn, N. Y.
Walter N. Beecher, The Limousine Carriage Mfg. Co., Chicago.
Louis E. Burr, Woods Motor Vehicle Co., Chicago.
C. A. Bucholz, The F. Ronsdadt Co., Tucson, Ariz.

Digitized by Google

John D. Craft, Hercules Buggy Co., Evansville, Ind.
Thomas Clements, James Cunningham Son & Co., Chicago.
Thomas Clark, The Clark Carriage Co., Amesbury, Mass.
P. R. Doherty, W. A. Paterson Co., Flint, Mich.
William Dischert, Wm. Dischert Carriage & Wagon Co., St. Louis.
Arthur Erby, Erby Carriage & Wagon Co., Chicago.
G. E. Elsey, G. E. Elsey & Co., Springfield, Mo.
Emil Gartner, St. Louis.
Wm. A. Hayden, Spaulding Mfg. Co., Grinnell, Ia.
Wm. J. Hughy, Chicago Coach & Carriage Co., Chicago.
Geo. R. Heylmann, J. G. Heylman & Son, Noblesville, Ind.
C. D. Heile, H. McFarlane Co., Chicago.
A. H. Hopkins, Cartier, Chapman & Co., Ludington, Mich.
Charles P. Kimball, C. P. Kimball & Co., Chicago.
A. A. Lawder, Chicago.
Low M. Morris, Frankfort Carriage Mfg. Co., Frankfort, Ind.
Fred. L. Meckel. Fred. L. Meckel Co., Chicago.
W. G. Norman, Norman Buggy Co., Covington, Ga.
Louis Oehme, Philadelphia
H. A. Peckham, Lowell Cutter Co., Lowell, Mich.
E. J. Powers, McCabe & Powers Wagon Co., St. Louis.
E. F. Quimby, Colfax Mfg. Co., South Bend, Ind.
H. H. Robinson, H. H. Robinson Mfg. Co., Des Moines, Ia.
Wm. Rodenhausen, Excelsior Wagon Works, Philadelphia.
W. R. Sherin, W. R. Sherin Co., Milwaukee.
Clyde H. Schryver, Chicago Merchandise & Equipment Co., Chicago.
H. B. Staver, Staver Carriage Co., Chicago.
J. H. Votel, Montgomery, Ward & Co., Chicago Heights, Ill.
Geo. Waldman, Germantown, Philadelphia.
R. E. Wisner, Wisconsin Carriage Co., Janesville, Wis.

New Associate Members.

C. A. Buffington, C. A. Buffington & Co., Berkshire, N. Y.
F. T. Barber, Barber Mfg. Co., Anderson, Ind.
Jas E. Bush, Chicago Varnish Co., Chicago.
Wm. B. Conklin, Howells Bros., New York City.
Alvin T. Coate, Carriage Builders' Fire Insurance Co., Indianapolis.
E. S. De Tamble, Speed Changing Pulley Co., Anderson, Ind.
P. P. Dyke, Sidney Mfg. Co., Sidney, O.
John M. Eadie, Eadie Vehicle Gear Co., New York.
Charles N. Eaton, Kalamazoo Spring & Axle Co., Kalamazoo, Mich.
J. B. Finley, Ohio Valley Bending Co., Parkersburg, W. Va.
Jacob Gogel, The Gogel Mfg. Co., Toledo, O.
Fred. N. Hamerstrom, Trenton Rubber Mfg. Co., Trenton, N. J.
E. B. Hoge, Simplex Roller Bearing Plate Co., Philadelphia.
A. D. Hartwell, Gregg Varnish Co., St. Louis.
Charles E. Hull, Reno Bros. Paint Co., Pulaski, Pa.
Charles C. Miller, Wayne Paper Mills, Hartford City, Ind.
Elmer R. Murphy, Jas. H. Rhodes & Co., Chicago.
Herman C. Nelson, Jewel Mfg. Co., Chicago.
R. L. Notman, McKinnon Dash Co., Buffalo.
W. H. Oliver, Oliver Mfg. Co., Chicago.
A. E. Prince, Fabrikoid Co., New York.
James E. Rielly, P. Rielly & Son, Newark, N. J.
Charles R. Silkman, New York.
Frank M. Schumann, Moller & Schumann, Brooklyn.
Oliver J. Strayer, Cleveland Axle Mfg. Co., Canton, O.
Edwin E. Stevens, Smith & Co., Chicago.
Wm. H. Tuthill, Tuthill Spring Co., Chicago.
Ferd. L. Titchener, Cortland Forging Co., Cortland, N. Y.
E. H. Wilson, Wright Carriage Body Co., Moline, Ill.
LeRoy S. White, L. S. White Forging Co., Endicott, N. Y.
Guy S. Waites, Ault & Wiborg Co., Cincinnati.
E. T. Yarnelle, Mossman-Yarnelle & Co., Fort Wayne, Ind.

A total of $2,211.64 was contributed by members to the technical school during the year.

Article V of the By-Laws provides that all members who allow their dues to remain unpaid for three years shall be reported to the convention and then dropped from the roll.

There are 14 active and 5 associate members who come under this rule.

From the invitations to send delegates from the local carriage associations who have enough members of this association to entitle them to the same, I have received from the Philadelphia Carriage & Wagon Builders' Association names as follows: George Waldman, William Rodenhauser and William Gerhab.

Report on Technical School.

The Committee on Technical School reported that "the institution's efficiency during the past year has been fully maintained. We enter upon the new school year with enlarged equipment, having received from the Mechanics' Institute another large well-lighted and fully furnished classroom. This now gives us ample facilities for full-sized work, which has been lacking heretofore and is a very valuable and important addition.

"Your committee point with great pride to the wonderful record for attendance by the pupils of the school during the year, which reached the remarkable figure of almost 97 per cent. The school has always achieved a splendid record in this direction, but, as this is so phenomenal, we desire to call public attention to the fact. Most of the pupils work hard during the day at their trade, and then to be willing to make their attendance upon the school duties so nearly perfect shows an amount of fidelity and devotion which proves how highly valued the advantages you offer to the deserving young men who are employed in our trade are."

Instructor's Review.

The superintendent of the technical school, Andrew F. Johnson, submitted his report through the secretary. It covered the year ending August 31, 1909, and read:

Day and evening classes opened for the season in the schoolrooms in the Mechanics' Institute, 20 West 44th Street, New York City, on September 28, 1908.

The day class was composed of 17 men, claiming homes in the following named States: Connecticut, Massachusetts, Missouri, New Jersey, New York, West Virginia and Wisconsin. There were three pupils from Canada.

Their ages varied from 18 years to 42 years, with an average of 27 years. Six of these men were body makers, two were trimmers, two were foremen, one blacksmith, one office man and one draftsman. The attendance for the season averaged 96.85 per cent.

The total enrollment in the evening class was 43 men, 22 were body makers, seven were general woodworkers, five were blacksmiths, three were office men, three were draftsmen, two were trimmers and one was a foreman. Their ages varied from 17 years to 42 years, with an average age of 26 years.

The attendance in the evening class averaged for the season 92.03 per cent.

There were 11 graduates, six of whom attended both the day and evening classes. The average age of the graduates is 26 years. Their names follow: James Albert Fitzsimmons, Edwin Joseph Peters, Sanford Evans Walke, Henry Roberts Wittkowsky, George Heuman Woodfield, Roy Frederick Anderson, Eugene William Botzenhardt, John Chesterfield, Edward Everett, William Marshall, Edward Henry Vaillancourt.

The school closed on April 12, 1909.

We are now in a position to give instruction to a class of 25 at least in the daytime and 50 in the evening. The men in our day class may, if they choose, study in the evenings in some of the other classes which meet in the building. In this way they may become familiar with engine drafting, electrical work, mathematics and physics, as well as other subjects.

In the corresponding department I have to report as follows on the work of the past year: New pupils, 36; pupils taking advanced studies, 19; lessons sent out, 1,543; drawings received, 812; examination papers received, 101; rating cards sent out, 913; letters sent to pupils, 898; letters received from pupils, 900; number of graduates, 6; average age of graduates, 33 years.

Officers Nominated.

The Committee on Recommending Officers submitted the following nominations:

Executive Committee for three years: J. D. Dort, Flint, Mich.; A. G. Brunsman, Cincinnati, O.; Morris Woodhull, Dayton, O.; Maurice Connolly, Dubuque, Ia.

To fill the vacancy caused by the death of E. M. Murphy, Pontiac, Mich., to serve for one year, Theodore Luth, Cincinnati, O.

To fill the vacancy caused by the death of C. F. Kimball, Chicago, to serve for two years, C. C. Hull, Connersville, Ind.

Vice Presidents: W. H. Roninger, St. Louis, Mo.; John L. Mason, Davenport, Ia.; Otto Nack, Mobile, Ala.; E. S. Bogle, Los Angeles, Cal.; Frank H. Delker, Henderson, Ky.; H. G. Shepard, New Haven, Conn.; S. B. Cooling, Wilmington, Del.; Fred. L. Meckel, Chicago, Ill.; C. Heflinger, Kansas City, Kan.; Albert O. Schwartz, New Orleans, La.; C. W. Nash, Flint, Mich.; Arthur P. Karbach, Omaha, Neb.; John E. Hayford, Newton, N. H.; C. S. Caffrey, Camden, N. J.; T. J. Sullivan, Rochester, N. Y.; W. C. Heath, Monroe, N. C.; A. H. Miller, Cincinnati, O.; T. J. Storey, Brockville, Ont.; Geo. W. Biehl, Reading, Pa.; John D. Craft, Evansville, Ind.; Owen Lilly, Memphis, Tenn.; Charles G. Bosher, Richmond, Va.; Charles Abresch, Milwaukee, Wis.; W. G. Norman, Covington, Ga.; James H. Hassett, Amesbury, Mass.

Mr. McIntyre Honored.

The action on the aforementioned nominations was deferred until the next day's session, at which the entire list was ratified

Digitized by Google

and declared elected, including Henry C. McLear, of Wilmington, Del., who was unanimously renominated secretary-treasurer. The formal election as president of Wm. H. McIntyre, who had been nominated the previous day, then took place.

Mr. McIntyre, in recognizing the honor bestowed upon him, said:

As you know, the office of president is generally somewhat of a sinecure, and it is to the members of the association and to the various committees that the credit of making our meetings successful is due. I do not want to think that the president is the whole thing. I can do very little for this association without the hearty assistance and co-operation of every member, but with the support of the membership I will do the very best I know how.

THIRD AND FINAL SESSION.

The third day's session opened with the reading of the report of the Freight and Classification Committee by Theodore Luth, of Cincinnati, O. The paper covered the following points:

We reported last year that the requirements for the lengths of crates in the official territory had been changed from 94 inches to 100 inches, and that we still had before the Classification Committee our argument for an entire elimination of the requirements as to the length of crate. Since then the Official Classification Committee has extended the length requirements from 100 inches to 115 inches. This additional 15 inches allows many styles of surreys and spring wagons to be shipped in low crates at one and one-quarter times first class instead of double first class, or in high crates at double first instead of three times first class.

This change is particularly important to the manufacturers of cheap spring wagons, who originally were obligated to pay a higher rate per hundred on that commodity than they were on more expensive vehicles that could be crated in shorter crates.

We have prevailed upon the Official Classification Committee to adopt the Western Classification Committee crating specifications which have worked out so satisfactorily to the vehicle trade since their adoption. The Southern Classification Committee has the matter under consideration and will no doubt, at their next meeting, adopt the same specifications, in which case the crating specifications of the entire country will be uniform.

The Southern Classification Committee some few months ago made a rule requiring the covering of spindles either by wooden or metal hoods. This was a very unreasonable rule, and if it had gone into effect, would have worked a great hardship on the vehicle shippers, and would have been of no real benefit to the railroads. We succeeded in getting them to cancel this rule within a few days after it went into effect.

Weight Change Stopped.

The Western Trunk Line Committee, which represents the railroads of the entire Middle West, issued a notice some time since that they contemplated advancing the minimum weight on vehicles in that territory from 20,000 to 23,000 pounds for 50-foot cars. Immediate action was taken on this proposition by your committee and several vehicle organizations, and, as a result, the Western Trunk Line Association was induced to take no action, and a promise was made by the line that was responsible for the agitation of this subject, that if it was to be considered again due notice would be given the vehicle interests, so that they could submit arguments why such a change should not be made.

View of Exhibition at C. B. N. A. Meeting at Washington.

Attention is called to a resolution in minimum weights on vehicles in cars in excess of 36 feet, which has been made in the official classification territory, and which is quite an advantage. For instance, a 40-foot car previous to August 15 of this year took a minimum weight of 12,500 pounds, while the present minimum is 11,200 pounds. Reduction in the minimum for other length cars is to be in the same proportion. The present minimum on a 50-foot car is 16,200 pounds as against the old minimum of 18,000 pounds.

Work of the Committee.

Following the freight classification discussion there was an address by A. G. Brunsman, of Cincinnati, on "The Classification Committee, Its Organization and Necessities." The

Digitized by Google

speaker reviewed in detail the early history of the movement, the plan of work followed by the railways in classifying freight and arriving at rates, and offered the following suggestion and argument:

Your Freight and Classification Committee, or as it might be better termed, your Classification Committee, should be composed of a chairman, appointing as his assistants on the committee the traffic managers of the various members of this association, who devote practically their entire time to traffic questions, study tariffs, have knowledge as to the rulings and action of the Interstate Commerce Commission, the possibilities of loading and crating vehicles, the relations between the different territories as to rates, etc., and can give to the railroad representatives such information as they must necessarily have in order to pass intelligently upon the questions before them.

The general disposition of the railroads toward the shipper at the present time, is one of harmony. They are now willing to do practically anything that is fair and reasonable, so long as they know that they are not being misled or opposed by unreasonable or uninformed shippers.

It has been suggested that the benefits derived from the Freight and Classification Committee are principally to the larger manufacturers. This is a most fallacious proposition. The larger manufacturers, having traffic managers who keep in touch with tariffs, changes in rules, etc., can protect themselves, but who protects the small ones? Necessarily the Freight and Classification Committee, if the small manufacturers contribute to the support of the committee.

There are inconsistencies as to minimums, lengths, heights and classes that will eventually be wiped out by the uniform classification, on which a committee of the best informed and highest paid traffic men has been working for many months. When they reach the vehicle question who is to look out for the interests of the spring vehicle manufacturers if your Freight and Classification Committee does not do it?

Oppose Rate Advance.

For some two years, as the members have doubtless read in the newspapers, there has been an agitation by the official classification roads, notably the trunk lines, that is to say, the roads operating east of Buffalo, for a general horizontal advance in rates, 10 per cent being proposed. Many arguments have been made by the railroads' representatives why this horizontal advance in all class rates is necessary, and with what little hardship the manufacturers and consumers could approve it. Your attention is called to the fact that within the ten years for which voluminous statistics are furnished by the railroads, and during which not one class rate has been changed, that the freight on spring vehicles in car loads has been increased 47 per cent by means of changes in classification. Do you think that we should submit to a further advance of 10 per cent?

At the conclusion of Mr. Brunsman's address on the classification and rate situation President Connolly called attention to the fact that at a conference of shippers held in Washington, October 20, the rate raising plans of the railways were discussed. It appears that the roads distributed a pamphlet designed to show the public the necessity for advance in rates, and the shippers declare that this pamphlet contained misleading information. The conference adopted resolutions opposing rate advances, and these resolutions after being read were endorsed by the C. B. N. A.

Timber Conservation.

The report of the Committee on National Conservation of Timber was next heard. In this report was incorporated the detailed account of the work of the Federal Commission on Forestry. This account entered into an exhaustive and thorough review of the situation. The commission said of the supply of hickory:

A late census report showed in its lumber cut a total of 203,211,000 board feet of hickory as compared with 9,255,000 feet for all hardwoods. This would indicate that the hardwood forest at present contained a little over 2 per cent of hickory. Probably as much as 4 per cent for the entire hardwood area. The forest of the eastern half of Kentucky has been estimated recently to contain about 5 per cent of hickory. The lumber cut does not show the large quantity of hickory which is cut and shipped in the form of round billets, riveted or split spoke stock, etc. This form of material is frequently culled from the forest ahead of the lumberman and tends to cause the low percentage of hickory in the lumber cut before noted. Including this with the 203,000,000 feet of hickory lumber would raise the total cut to at least 350,000,000 feet per year. Add to this the hickory cut for fuel in localities with no transportation facilities, and the heart, pecky and the portions wasted and the total soon amounts to 400,000,000 feet.

If hickory forms 3 per cent of this forest (much of which is culled already for hickory---the lumber cut alone showing a little over 2 per cent) there would be a total stand of 12,000,000,000 feet of hickory. Much of this is mature timber with an annual growth of less than 1½ per cent, as will be shown. Hence, there may be figured a growth of less than 180,000,000 feet against a consumption of about 400,000,000 feet.

Though this is to some extent speculation, when supported by increasing difficulty in getting hickory timber and with rising prices, it is nevertheless sufficient to indicate that a thorough study of the growth of hickory is one of the important steps in attempting to plan relief measures.

Conservation Resolutions.

The Conservation Committee declared that the opponents of forest waste had a friend in President Taft, and further reported:

We are also pleased to report that the National Hickory Association of the United States (whose membership is composed largely of the members of our association) have taken a great interest in this work of national conservation and have taken an active interest with the National Conservation Committee appointed by President Roosevelt in making up their report.

They also held an enthusiastic meeting in Cincinnati last April, passing resolutions to work toward the end of having a permanent National Conservation Committee appointed by the Government and also in the various States. Your committee recommends that all our members take an active interest and cooperate with the members of the National Hickory Association and the National Conservation Association, and offer the following resolutions:

"Resolved, That we heartily endorse the work of the National Hickory Association and assure them of our hearty co-operation.

"Resolved, That we favor the maintenance of conservation commissions in every State, to the end that each commonwealth may be aided and guided in making the best use of those abundant resources with which it has been blessed.

"Resolved, That we also especially urge on the Congress of the United States the high desirability of maintaining a National Commission on the Conservation of the Resources of the Country, empowered to co-operate with State commissions, to the end that every sovereign commonwealth and every section of the country may attain the high degree of prosperity and the sureness of perpetuity naturally arising in the abundant resources, and the vigor, intelligence and patriotism of our people.

"Resolved, That a joint committee be appointed by our chairman, to consist of six members of our association, whose duty it shall be to work in harmony with the State and National Commissions and the National Hickory Association."

The foregong resolutions were unanimously adopted by the C. B. N. A.

Routine Business.

Upon motion of Henry P. Jones all the vice-presidents and the secretary-treasurer, nominated the previous day, were formally declared elected by acclamation.

The convention empowered the Freight Classification Committee to expend such money as was necessary to prosecute its work before the Railway Rate Classification Committee.

The resolutions thanked retiring officers, the trade papers, exhibitors, the technical school, the authors of papers and the city of Washington; also Secretary McLear.

P. P. Hunter, of Cincinnati, for the Committee on Abuses in the Carriage and Accessory Trades, reported:

For the past two years sales have been so reduced that the proprietors and officers of most carriage factories have felt the necessity and advisability of making personal visits over much of their best territory, and have seen such complaints as dealers have cared to refer to. And personal contact with the head of the business has had a good effect on many who were inclined to be unfair.

Auto Dealers' Advantage.

The coming of the automobile has the attention of the carriage manufacturers, not on account of its gush or speed, but on account of its selling terms being spot cash. Let us say all credit is due the automobile manufacturers, and it would probably stimulate the motor or horse-drawn vehicle industry if the spot cash advance and C. O. D. for balance due could be perpetuated.

However, the day is not far ahead when autos will be sold on credit or notes and weekly payments like sewing machines and pianos, for the American people are gifted in over-production, but they are likewise great salesmen.

Digitized by Google

The Exhibit Committee returned a report complimenting those participating in the display.

The Accessory Trades Association notified the convention that it favored Cincinnati as a meeting place for next year, and had chosen Louis Straus, a member of the Executive Committee, to serve for two years.

Obituary Report.

C. E. Adams, of Cleveland, presented the following report for the Obituary Committee:

Almighty God has taken from our membership during the past year the following members:

Active.

George V. Deal, Jonesville, Mich., November 16, 1908; age 45.
Charles Frederick Kimball, Chicago, January 6, 1909; age 55.
James Hume, Amesbury, Mass., January 15, 1909; age 73.
James J. Fetzer, Columbiana, O., February 9, 1909; age 56.
Wm. H. Walborn, St. Paris, O., March 5, 1909; age 58.
Henry Timken, St. Louis, Mo., March 16, 1909; age 78.
John Hassett, Amesbury, Mass., March 23, 1909; age 44.
Frederick Herman Buchholz, Janesville, Wis., June 15, 1909; age 70.
Henry A. Lanman, Columbus, O., June 12, 1909; age 64.
David P. Cooper, Struthers, O., July 7, 1909; age 50.
Albert A. Pope, Boston, Mass., August 10, 1909; age 66.
John B. McFarlan, Connersville, Ind., August 15, 1909; age 86.
Edward M. Murphy, Pontiac, Mich., September 4, 1909; age 45.

Associate.

James C. Adams, Baltimore, Md., November 7, 1908; age 68.
Arthur Bittong, Philadelphia, Pa., March 21, 1909; age 51.
Jacob Neuman, Akron, O., March 27, 1909; age 44.
Edward D. Cook, Trenton, N. J., April 19, 1909; age 41.
Chas. E. Morrill, Chicago, Ill., July 2, 1909; age 78.
Charles E. Brown, Shortsville, N. Y., August 28, 1909; age 48.

Be It Therefore Resolved, That in the death of our fellow members, the association has sustained a great loss; we deeply miss "the touch of the vanished hand and the sound of the voice that is still."

The association extends its most sincere thoughts of sympathy to the bereaved families and friends of the deceased.

Never before have we had so many prominent members added to the roll above. Although they have gone from our midst, their deeds of kindness and friendship, and the thought of their value to our association will ever remain.

Cincinnati in 1910.

When the matter of selecting a convention city for 1910 was reached sentiment was expressed in favor of cities having meeting halls convenient to, or a part of, the exhibit hall. Strong endorsement was given Cincinnati by various members, and a cordial invitation from the mayor and business organizations of that city was read. S. E. Tumalty presented a strong argument in favor of his city, Rochester. Upon a vote being cast Rochester received 17 and Cincinnati 74. The Queen City was then made the unanimous choice of the convention.

Greetings between the C. B. N. A. and the National Retail Implement and Vehicle Dealers Association were telegraphically exchanged. Secretary Wilson, of the Agricultural Department, was thanked for the work of the Forestry Service, and the convention adjourned.

The Banquet.

The banquet was a brilliant affair, and was held at the Hotel Willard Thursday evening, October 21. Maurice Connolly presided as toastmaster.

Seated at the table with the tosatmaster were Rev. U. G. B. Pierce; Frederick H. Newell, director of the Reclamation Service; Hannis Taylor, former minister to Spain; Wade H. Ellis, Assistant Attorney-General; Homer McDaniel, Hugh Chalmers, Joseph McReynolds, John L. Weaver, W. P. Champney, A. G. Brunsman, E. C. Gramm, C. C. Hull, Dr. C. K. Luce, W. L. Hall, Louis Strauss, Henry P. Jones, John McGrath, George A. Brockway, T. M. Sechler, C. E. Adams, William F. Gude, J. D. Dort, C. A. Lancaster and H. C. McLear.

Attorney Ellis briefly discussed the anti-trust law.

Hugh Chalmers, president of the Chalmers-Detroit Automobile Company, who was introduced as "the greatest benefactor of the undertaking business and the casket industry," gave a stirring address on the principles of advertising and salesmanship honesty, emphasizing loyalty and enthusiasm.

F. M. Newell, director of the Reclamation Service, spoke briefly on the work which is being done in making waste lands arable in the West.

Homer McDaniel, of Cleveland, O., emphasized the value of co-operation.

ACCESSORY MAKERS ELECT OFFICERS.

John McGrath Again President—Delegates Happy Over Bright Outlook.

The carriage accessory makers, known as the Associate Members of the C. B. N. A., held their annual session in conjunction with the C. B. N. A. meeting in Washington. The spirit of optimism prevailed, and the accessory men present practically unanimously declared faith in future trade conditions. The consensus of opinion was that the year 1910 would be a banner year in the carriage and wagon trade.

The following officers were elected on October 21 for the ensuing year: John McGrath, president; Henry P. Jones, vice-president; Homer McDaniel, secretary; O. E. Walker, treasurer.

Henry Higgin was elected to the Executive Committee for the three-year term. The other members of the Executive Committee are C. E. Adams, two-year term, and O. B. Bannister, one-year term. Louis Straus was selected to represent the accessory makers on the Executive Committee of the C. B. N. A.

Cincinnati was selected for the next convention.

AIRY WORK SHOPS.

Perfect ventilation in a shop or factory, as under all other conditions, means that every person in a room should take into his lungs at each respiration, air of the same composition as that surrounding the building, no part of which has recently been in his own lungs or those of his neighbors, or which consists of the products of combustion generated in the building. At the same time, according to Dr. John S. Billings, he must feel no currents or drafts of air, and must be perfectly comfortable as regards temperature, being neither too hot nor too cold.

The air required to meet these conditions must not be less than 2,000 cubic feet per hour for each person, with the same amount per hour for each cubic foot of gas consumed, whether for light, heat or power, says Popular Mechanics. In a loft 25 feet wide and 100 feet long, containing 80 workmen, and lighted with electricity, the amount of air required would therefore be 160,000 cubic feet per hour. This amount of air per hour would move at the rate of about one-eighth of a mile per hour, and would be sufficient to charge the supply once every ten minutes, assuming a ten-foot ceiling. The New York and Massachusetts State laws for school rooms require that change eight times an hour, and some authorities even recommend 50 per cent in excess of this.

Dr. Daniel Lucas, of New York, states that it is a well-known law of hygiene that one gas jet will consume as much oxygen as five persons, and, if a building is so lighted, this must be taken under serious consideration. Since electricity does not consume the oxygen and has been reduced 50 per cent or more in cost by the new high efficiency lamps, it would appear that the easiest way to comply with the labor law regarding ventilation would be to abandon gas lighting.

The operating cost for a ventilating system is made up of two items, the first being power for turning fans, and the second, additional heat for incoming air In the future it is probable that factories and lofty buildings will be equipped with ventilating apparatus at the outset, with the ducts concealed in the walls and the fans located in the basement.

In commenting on the foregoing the Team Owners' Review observes that many stables for horses are like shops—miserably ventilated and are death traps for stablemen as well as the animals.

Digitized by Google

C. B. N. A. EXHIBITORS

The exhibits at the Carriage Builders' National Association Convention at Washington were very attractive and interesting, and if anything a little more elaborate and varied than heretofore.

The only complaint delegates had to offer was that the exhibit hall was at one end of the city and the meeting place at another. This condition divided the attention of delegates, and decreased attendance at some sessions. Delegates en route from the exhibits to the meetings spent much more time sightseeing than they would had the convention features been under one roof, or in adjoining buildings.

Following is a list of the firms having goods on display at the show:

Aden Mfg. Co., Greensboro, N. C. Represented by Joseph Aden.
Atkins & Townsend, Felton, Del. W. E. Townsend, president and general manager, in charge.
Automobile Axle Co., Lancaster, Pa. Represented by A. H. Worrest and Otto Bohn.
Backstay Machine & Leather Co., Union City, Ind. Represented by R. C. Schemmel, proprietor; S. H. Clark and B. P. Southard.
Becker, E., Milledgeville, Ga. Represented by E. Becker.
Bradley & Son, C. C., Syracuse, N. Y. C. C. Bradley, Jr., and C. C. Chamberlain in charge.
Brooks & Co., Clarence, Newark, N. J. Represented by Jacob E. Cope, Warren Broome and J. C. Hurley.
Buser-Poston Tufting Machine Co., Chillicothe, O. Represented by B. C. Poston, assisted by Frank Roth, demonstrator.
Campbell & Dann Mfg. Co., Tullahoma, Tenn. Represented by J. L. Dann.
Carriage Woodstock Co., Owensboro, Ky. N. J. Baxter, manager, in charge.
Carter Co., The George R., Connersville, Ind. Represented by George R. Carter and Curtis Withrow.
Cately & Ettling, Cortland, N. Y. Mrs. A. M. Ettling and Henry Cately Ettling were in charge.
Chase & Co., L. C., Boston, Mass. Represented by John Hopewell, L. H. Hubbell and R. R. Bishop, Jr.
Cleveland Hardware Co., Cleveland, O. Represented by C. E. Adams, W. F. Gibbons, W. H. Chase, J. R. Swan, A. S. Allen, R. S. Crotty, L. E. Hickok, O. T. Saunderson, Carl Andrews, M. H. Chase, C. A. Nadeau and T. J. Black.
Cleveland Axle Mfg. Co., Canton, O. Represented by George A. Laughlin, O. J. Strayer and H. W. Bowman.
Cleveland-Canton Spring Co., Canton, O. Represented by George A. Laughlin, O. J. Strayer and H. W. Bowman.
Consolidated Rubber Tire Co., New York City. Represented by Van H. Cartmell, president; F. E. Holcomb, general manager; F. A. Kissel, H. S. Cox and F. A. Oatman.
Cooper Co., J. A. & D. P., Struthers, O. Represented by J. A. Cooper.
Cortland Carriage Goods Co., Cortland, N. Y. Represented by A. E. Roninger, Jesse Jennison, Melville Ritchie, A. W. Curtis.
Cowles & Co., C., New Haven, Conn. Represented by F. M. Ruwet, M. S. Bottume and H. P. Bradley.
Crandal, Stone & Co., Binghamton, N. Y. Represented by Charles Titchener, Mr. Samuelhrdlouon uoshrdlouonouonouononouou cmfwyp Titchner; Mr. Standard, secretary; J. M. Bryant, Frank Howland, Otto Hendrickson, Mr. Lynch and William Gordon.
Dayton Malleable Iron Co., Dayton, O. Represented by H. E. Morrill, P. D. Schenck and R. A. Herbruck.
Diamond Rubber Co., Akron, O. Represented by E. H. Fitch, G. List, C. W. Simpson, H. B. Harmer and E. B. Williams.
Ditzler Color Co., Detroit, Mich. Represented by R. E. Rodriguez and P. M. Ditzler.
Dusenbury & Co., Inc., Louis, New York City. Represented by Louis Dusenbury and F. N. Brown.
Eadie Vehicle Gear Co., New York City. Represented by J. D. Eadie.
Eberhard Mfg. Co., Cleveland, O. Represented by Charles A. Hemicke, F. M. Edgar, C. V. Samuelson, John McGrath and William Austin.
Enterprise Brass & Plating Co., Cincinnati, O. George Apfel was in charge.
Eccles Co., Richard, Auburn, N. Y. Andrew H. Johnson and W. W. Eccles representatives.
Excelsior Seat Co., Columbus, O. D. E. Pittenger, representative.
Fabrikoid Co., Newburgh, N. Y. Representatives, J. K. Rodgers and A. E. Prince.
Fairfield Rubber Co., Fairfield, Conn. Represented by E. W. Harral and Major W. W. Harral.
Fernald Mfg. Co., Inc., Northeast, Pa. Represented by Edward M. Selkregg and R. J. Matthews.
Firestone Tire & Rubber Co., Akron, O. Representing the company were A. P. Cleveland, in charge; H. S. Firestone, president; W. P. Walton, manager Philadelphia branch; W. C. Mayville and J. A. Smith, of the Philadelphia branch; D. C. Swander, manager New York branch; George A. Talbott and Mr. Beeden, from the factory.
Fitch Gear Co., Rome, N. Y. L. M. Fitch, representative.
Goodrich & Co., B. F., Akron, O. F. D. Brewster, R. J. Murphy and J. W. Lyman representatives.
Goodyear Tire & Rubber Co., Akron, O.
Gresham Mfg. Co., Griffin, Ga. Represented by J. W. Gresham and E. W. Beck.
Hartford Rubber Works Co., Hartford, Conn. Represented by W. W. Reed.
Herbrand Co., The, Fremont, O. Represented by Creighton Thompson.
Hess Spring & Axle Co., Carthage, O. Represented by E. J. Hess and J. S. Beatty.
Ideal Carriage Washer & Automatic Water Saver Co., Rochester, N. Y. E. P. Gaylord and W. J. Stephens, representatives.
Indianapolis Dash Co., Indianapolis, Ind. Represented by R. H. Harden and J. A. Marshall.
Johonnot, Geo. B., Buffalo, N. Y. Represented by G. B. Johonnot and W. P. Laing.
Kennedy, Willing & Co., Philadelphia, Pa. E. C. Shellenberger and E. B. Barr, representatives.
Keystone Forging Co., Northumberland, Pa. Represented by Isaac Cornwell and John Dudley Weeks.
Kimble, Andrew, Zanesville, O. Represented by Mr. Kimble, with the assistance of Frank A. Kimble.
King Fifth Wheel Co., Philadelphia, Pa. Represented by F. D. Fryer, president; F. S. Riggs, treasurer, and A. O. Chase.
Laidlaw, Jr., Wm. R., New York City. Represented by Mr. Laidlaw.
Liggett Spring & Axle Co., Monongahela, Pa. Represented by H. R. McMahon, general manager; J. H. Neuhart, secretary and treasurer; J. F. McCoy, scuperintendent, and L. E. Stone.
Masury & Son, John W., New York City. Represented by T. J. Rowan, W. F. Egan, Thomas Morrow and T. E. Mulford.
McKinnon Dash Co., Buffalo, N. Y. W. Breckenridge, F. S. Claypoole, D. P. Hale and W. H. Notman, representatives.
Metal Stamping Co., New York City. Represented by J. F. Galvin, president; W. R. Noyes and Otto Bauer.
Moller & Schumann Co., Brooklyn, N. Y. Represented by T. W. Schumann, W. R. Hyde and others.
Monarch Carriage Co., Cincinnati, O. Charles Weiglien, representative.
Mulholland Co., Dunkirk, N. Y. O. B. Mulholland, president, and E. J. West, representatives.
Muncie Wheel Co., Muncie, Ind. Represented by O. B. Bannister, president, and O. M. Thomas.
Neider Co., F. A., Augusta, Ky. George S. Weimer in charge.
Nelson Co., A. T. A., Cincinnati, O. A. T. A. Nelson, president, in charge.
Peters & Herron Dash Co., Columbus, O. Represented by Charles M. Peters, president, and J. D. Kilmer.
Pierce Co., F. O., New York City. Represented by H. A. Fitch, sales manager; Horace E. Smith and S. T. Clineman.
Pioneer Pole & Shaft Co., Piqua, O. Represented by W. A. Snyder, president; A. R. Friedman, assistant general manager, and C. O. Whitney, sales manager.
Randall, F. C., Janesville, Wis.
Republic Rubber Co., Youngstown, O. Represented by F. A. Hastings, sales manager, and Geo. M. Hoffman.
Rhodes & Co., James H., Chicago and New York City. Represented by John D. King, vice-president,, New York; Louis E. Diamond, Chicago.
Reilly & Son, P., Newark, N. J. Represented by E. R. Burley, J. E. Leinen, Homer Chambers and W. G. Peters.
Rodringuez, R. E., New York City.
Rose Mfg. Co., Philadelphia, Pa. Represented by H. C. Rosenbluth.
Royer Wheel Co., Cincinnati, O. Represented by John W. Herron, president: Joseph Coleman and C. L. Pfeiffer, salesmen.
Schubert Gear Co., August, Oneida, N. Y. August Schubert, representative.
Schubert Bros. Gear Co., Oneida, N. Y. George Schubert, president, representative.
Sheldon Axle Co., Wilkes-Barre, Pa. Represented by W. H. Son, vice-president and general manager; W. D. Gordon, O. A. Timberlake, Chas. Gleason, J. A. Young, Geo. W. Wall and J. B. Decker, superintendent.
Shortsville Wheel Co., Shortsville, N. Y. Represented by S. L. Heath and J. F. Wilson.
Sherwin-Williams Co., Cleveland, O. J. O. Hasson, D. J. Moore, R. L. Graves, G. E. Branham and C. W. Wallace, representatives.
Smith & Co., Edward, New York City. Represented by James F. McBride and John W. Welsh.
Spitzli Mfg. Co., Utica, N. Y. Represented by John K. Light.
Standard Wheel Co., Terre Haute, Ind. Frank P. Mills, Emil J. Fisher, G. D. Fisher, representatives.
Stein Double Cushon Tire Co., Akron, O. Represented by Jacob H. Haber, M. M. Moon and F. A. Smith.
Straus & Sons, M., Newark, N. J. Represented by Burnett W. Straus and Louis Straus.
Thermoid Rubber Co., Trenton, N. J. Represented by J. W. Pohlman, Mr. Cadwallader and J. O. Stokes, president of the company.
Tiel & Co., Geo., Philadelphia, Pa. Represented by S. E. Wright.
Timken Roller-Bearing Co., Canton, O. Represented by A. N. Bingham and E. B. Lausier.
Timken-Detroit Axle Co., Detroit, Mich. Represented by A. N. Bingham and E. B. Lausier.
Trenton Spring Mattress Co., Trenton, N. J. Represented by Rudolph Mayer.
Tufting Machine Supply Co., Chicago, Ill. A. Freschl, representative.
Union Forging Co., Union, N. Y. Represented by Frank S. Titchener, president, and Edward B. Furry.
Victor Rubber Co., Springfield, O. Henry Durr, president; Carl P. Cartmell and E. H. Miller, representatives.
Wayne Wheel Co., Newark, N. Y. Represented by R. W. Jessup.
West Tire Setter Co., Rochester, N. Y. Represented by S. E. Tumalty and J. E. Povle.
Wilcox Mfg. Co., D., Mechanicsburg, Pa. Represented by F. E. Wilcox, Aaron Booser, vice-president; Robert Bates Thomas, Jr., J. H. Kooler, Ira Ebley and A. T. Wishart.
Willey Co., C. A., Hunter's Point, New York City. Represented by Henry Willey, F. Shurganty, Robert Bowen, Eugene Heller, D. Anderson, George B. McClain.
Woll & Sons Mfg. Co., Peter, Philadelphia, Pa. Represented by Rud. Krobitzsch.
York Wagon Gear Co., York, Pa. Represented by R. A. Paulis, H. D. Keller, A. W. Dettinger and O. S. Buck.

A STRIKING EXHIBIT.

The exhibit of the Moller & Schumann Co. was a most interesting one from many points of view, and consisted of a handsomely finished road wagon, body finished with four colors; also a number of large, handsome panels finished to demonstrate the new solid colored rubbings that this firm makes. According to the results shown at the Washington convention the Moller & Schumann Co. are to be complimented on their display, and carriage builders will doubtless welcome such a line with open arms. It showed great possibilities to the carriage builders in the finishing of their product.

Digitized by Google

Vehicle Builders Are Optimistic.

Comments and Opinions of Interest to all on Ex-President Connolly's Speech Concerning the Advent of the Auto in the Transportation Field.

The consensus of opinion among manufacturers is that the horse-drawn vehicle business is in excellent condition and will continue to prosper. They so expressed themselves in letters to The Hub, and while there are a few individual expressions of worry over auto competition the majority are optimistic.

One of the chief features of the Washington convention of the Carriage Builders' National Association, as published elsewhere in this issue of The Hub, was ex-President Connolly's speech anent the auto industry. Mr. Connolly declared he saw where the auto was encroaching upon the carriage builders' business, and advised his hearers to begin building auto bodies. In view of the wide publicity given Mr. Connolly's declaration as to the future of the carriage industry, The Hub queried a number of leading manufacturers as to their views on the general situation. A number are quoted fully, and extracts are given from the letters of some.

The new president of the C. B. N. A., W. H. McIntyre, of Auburn, Ind., and himself a builder of high-wheel motor vehicles, wrote as follows:

"I am very much pleased to acknowledge your favor, calling my attention to the article, 'The Swan Song of the High-Grade Carriage Builder,' and believe the lay readers have not read this statement with care. I am sure it was not the intention to convey the information that the day of the carriage builder was over, but only to specify that the automobile affected largely and most seriously the builder of what is known as high-priced vehicles.

"Anyone that believes, or has reached the conclusion that the horse-drawn vehicle industry of this country is on the decline is certainly not acquainted with the facts and figures provided by governmental and other reports. That some branches, grades, styles of construction have been injured through the advent of the automobile is not disputed.

"It is said there are 175,000 automobiles in this country today. There were 1,500,000 horse-drawn spring vehicles built this year. The proportion of the total automobiles in this country to the total horse-drawn vehicles in one year is slightly better in ratio of one to ten. The conservative estimate of the total number of automobiles built this year places a volume at 90,000.

"One should not overlook statistics which may be very cold, though very reliable, and one interested in gaining facts regarding a certain line of industry will find them valuable, and if considered from any view point cannot be otherwise than a great assistance.

"In 1897 there were 13,500,000 horses, and the average value $37 each. Ten years later the horses had increased to a volume of 20,600,000, and the average value had increased from $37 to $95. These horses are generally used for agricultural purposes. On the farm, in the small towns and villages and where you find these horses you must of necessity find the $40 to $50 horse-drawn vehicles. The volume of horse-drawn vehicles in 1908 showed a very material decline from 1907. The number of horse-drawn vehicles built in 1909 showed an increase over 1908 of 20 per cent. The volume manufactured in 1909 is 15 per cent less than the total produced in 1906, which was the largest in the history of this country, and falling but a few short of 1,800,000 vehicles.

"If one were considering the small volume of automobiles and the enormous volume of horse-drawn vehicles in this country he cannot be other than impressed with the utter impossibility of the automobile supplanting the horse-drawn vehicle, at least for a remote number of years.

"The carriage builders, being associated with vehicles, their style and their form of construction are especially well fitted to handle the self-propelled vehicle, and it is proper that the Carriage Builders' National Association should call attention to the situation and advise as to the condition of the trade and then to permit each manufacturer to determine within himself the advisability of entering into this line of manufacture.

"I have no desire to pose as a prophet, but it is impossible for me to see any substitute in the self-propelled vehicle that will displace the $50 buggy built by American vehicle manufacturers, and worked out by them through many years practically to a state of perfection; and so long as horses continue to be used by the American farmer, so long will the buggy continue following the horse, and for the last ten years horses have been increasing in this country at the rate of one million a year."

Only Brougham and Landau Hurt.

Some of the manufacturers expressed the opinion that the automobile had not injured in the slightest degree the business of builders of medium or low-priced horse-drawn vehicles. But the opinion was advanced that the auto had invaded the field heretofore occupied by the brougham, landau and heavy carriage. It is recorded that some of the builders of this class of vehicles have already engaged in the manufacture of bodies for automobiles and find the change profitable. Here is the view taken by the Michigan Buggy Co., of Kalamazoo, Mich.:

"Mr. Connolly had in mind the builders of broughams, landaus and heavy carriages, and he did not assume that the automobile business was going to place crepe upon the arms of the ordinary carriage builders.

"There is no question in our mind but that the automobile business has come to stay, and we believe it a big factor in transportation in the future, but we do not believe it is going to seriously affect, at least for a long time, the manufacturers of medium-priced vehicles, such as are sold to the ordinary consumer. In fact we were never more busy than now, and we expect the increase in population will take care of the increased manufacturing of automobiles."

C. E. Brown, of the Union Carriage & Gear Co., Watertown, N. Y., also sees sharp competition from the auto confined to the high-grade carriage field. He says:

"We agree perfectly with Mr. Connolly that at the present time the carriage business in high-grade work is decidedly a back number, and just at present we see no hope for anything very much better for the wagon builder. The automobile craze is on, and in our judgment is liable to be for some time to come."

Here is an interesting expression of opinion from J. M. Baum, of the Mier Carriage & Buggy Co., which makes both horse-drawn and horseless vehicles:

"The outlook for the vehicle business for the year 1910 is exceptionally bright and flattering. While we are making a line of automobiles and have for the past three years in connection with our carriage line, we can in no way see a falling off in our business, and at the present time, even as early in the season as it is, we have booked more business than we have ever done in any of the past five years at the same time of the year. It is our opinion that the medium grade vehicle manufacturers will always have a field for their output. While 1907, '08 and '09 have been years of depression with decreased outputs among

Digitized by Google

most carriage manufacturers we are proud to say that during all these years our business has steadily increased. If we can show the same volume of business in the future that we have in the past we expect to continue making a line of light pleasure vehicles. We have enough confidence in the carriage business to increase our facilities and styles for 1910."

George H. Schelp, of the J. W. Moon Buggy Co., St. Louis, Mo., says the auto has come to stay and will cut quite a figure in carriage industry. However, the buggy and medium priced vehicle will not be materially affected.

Other manufacturers were especially optimistic. The Brown Carriage Co., of Cincinnati, declared that medium grade vehicles will show a big increase in 1910. The Queen City Carriage Co., of the same city, said emphatically that the auto was "not worrying them one bit," and they "would not enter that field." The Fouts & Hunter Carriage Mfg. Co., of Terre Haute, Ind., has been so busy that it has not noticed the auto industry. They have been and will continue in the horse-drawn line.

The H. H. Babcock Co., of Watertown, N. Y., declares that its business is up to any had during or since the panic. By the fall of 1910 they look for as large a business as they ever had.

Panic, Not Auto, at Fault.

E. M. Galbraith, of the Lion Buggy Co., Cincinnati, advances a view of the present situation that will doubtless account for the somewhat pessimistic views of some. He says:

"Unfortunately for the buggy trade, hard times and the automobile came together. It has been very difficult to separate the proportion of affect that each has had upon the trade. So far as our own business is concerned, we do not feel that there are many users of Lion vehicles who have purchased automobiles, our small loss of business having been occasioned almost entirely by conditions due to hard times."

Further Mr. Galbraith said: "We have, of course, at times been concerned regarding the effect of the automobile on our business, but we are slowly getting over our fright. Things look good for next year and we believe the buggy man will have his full share of prosperity, and those now remaining in the business will have dismissed from their minds the fear of complete loss of trade on account of the automobile. We write only from the standpoint of the manufacturer who builds a medium grade line of goods which is sold to country trade almost exclusively, and not from the standpoint of the high-grade carriage builder."

A. T. Jackson, of the Emerson Carriage Co., Rockford, Ill., says: "We feel very optimistic relative to our future. The automobile has come, is here to stay, but, with the vast number of carriage factories, either going out of business or dividing their interests, we feel that the future is reasonably bright for those who give their undivided attention to vehicle construction."

Theo. Pruden, of the Eufaula (Ala.) Buggy Co., says that the auto will hurt the sale of the fine horse-drawn vehicle for a time, but it will play out.

The Moline (Ill.) Plow Co., owners of the Henney Buggy Co. plant at Freeport, Ill., wrote:

"The high-grade carriage builder will have considarable difficulty in marketing his product, but we do not feel that this is true of the medium grade manufacturer. Relative to vehicles of the latter class will say, that we can better give you our idea as to the future trade by advising you as to what we are doing in the way of getting ready to take care of more of this business. We have just completed an addition to the plant of the Henney Buggy Co. 88 by 156 feet and five stories in height. This makes the Henney Buggy Co. a solid block of building 300 feet square, five stories. Some two years ago we purchased the plant of the Robinson Mfg. Co., of Freeport, and have since built on those grounds a building 322 feet long, 114 feet wide, six stories. We are now building a building on the same grounds 550 feet in length, 114 feet wide, three stories. These three latter plants we call the Freeport Carriage Co. Altogether we have in Freeport one million feet of floor space and we estimate that our output will soon be from 80,000 to 100,000 vehicles per annum of medium grade work."

Manager W. H. Roninger, of the Banner Buggy Co., St. Louis, Mo., says:

"The automobile will not be able to drive out the horse-drawn vehicles that are being built for the masses. We are inclined to the opinion that it is helping our business. We have had the largest trade, both in amount and in dollars and cents, that we have ever enjoyed since we have been in business. We know of a great many of our customers who are handling automobiles and who say that the demand for the very high priced work has been curtailed, but the demand for the average buggy and surrey is about the same as it has always been."

A. G. Brunsman, of the Anchor Buggy Co., Cincinnati, says that the future looks bright for the trade vehicle, and that the business will grow despite the automobile.

Horse Outfit Cheapest.

The Zimmerman Mfg. Co., Auburn, Ind., takes this view of the situation:

"The rural consumer has his motive power (the horse) without any considerable cost to himself, and to buy a buggy involves so small an amount of the cost of an automobile that he can have a turnout at a comparatively small part of what it would cost him if he were to buy even the cheapest runabout on the market."

C. C. Hull, of the Rex Buggy Co., Connersville, Ind., says: "It is our judgment that the so-called high-priced vehicle will be much less in demand in the future, because of the advent of the automobile, but the medium price and cheaper grades of vehicles will continue as popular and in as great a demand as in the past.

"The vehicle industry, like most other industries, has suffered from the depression during the past 18 months, but at this time the condition is approaching 'normal' as rapidly as that of any other industry, excepting perhaps the iron and steel industry. We are confident that the year 1910 will demand vehicles of the medium and lower grades to the full capacity of the factories making this quality of vehicle."

O. R. Dickerson, of the Deal Buggy Co., Jonesville, Mich., says:

"Undoubtedly the automobile is making a difference with certain classes of horse-drawn vehicle manufacturers. There are certainly quite a number of carriage manufacturers who have gone out of the business, but so far as we are able to learn it is not because there is no market for horse-drawn vehicles, but because the automobile field is more attractive. As far as we are concerned prospects were never brighter for a good business than they are at the present time. In our judgment the manufacturers of medium priced horse-drawn vehicles will have all the business they can take care of for the next few years."

F. H. McAdow, Staver Carriage Co., Chicago, Ill., expresses the belief that Mr. Connolly's remarks are correct insofar as they relate to the builders of heavy or closed carriages, and also the manufacturer who is producing a fine grade or special vehicle adapted to physicians' use. "But," he says, "insofar as the automobile may be affecting the moderate priced vehicle, which is bought largely by farmers, or by people of moderate means, we think it will be a long time before the automobile can supplant such vehicles to any considerable extent. If every user of a horse-drawn vehicle proposed to discard it and buy an automobile, it would be a great many years, at the present rate of production on automobiles, before the demand could be supplied. There are various other considerations affecting this question, which would indicate that horse-drawn vehicles will be manufactured for many years to come, and in considerable volume."

T. M. Sechler, of the D. M. Sechler Carriage Co., Moline, Ill., takes the following view:

"The manufacturer of the high-grade carriage has been hit hard by the automobile. When a durable gasoline runabout can be had at about the cost of a buggy, harness and horse, or a

Digitized by Google

touring car at cost of a surrey with a pair of horses and harness, the manufacturer of medium priced light work will find his sales diminishing for a time. But the horse is not going out of use. While I look for an increase in the demand for automobiles for a while—probably for three years—I feel sure that a reaction will come, and that in time the horse-drawn vehicle will at least equal in number the horseless. Some of the well-to-do are already realizing the physical damage to nerves and other organisms attendant on the high speed vehicle and are going back to the horse, and this number will increase every year. The farmer will presently tire of repairs and replacements and do likewise. No, I don't think it time for the swan song—only there is a time of waiting for the reaction."

Only Smaller Men Crowded Out.

Another firm wrote as follows: "The distribution of carriages and horse-drawn vehicles is going through a change, as we believe the larger jobbing houses are making their own vehicles. This will cause a reduction with a great many of the smaller carriage manufacturers. We refer to the better class of work for we believe the pneumatic has done its work on this score. There always has been and always will be a great demand for the medium class."

J. C. Wilson, of the Wilson Co., Detroit wagon builders, says of his particular line: "The wagon business is quite seriously affected by the auto business, so much so that this company has gone out of the wagon business. We are now manufacturing auto parts. We see in this field more remunerative profits. The horseless delivery wagon is coming fast."

Another firm declining to be quoted said that Mr. Connolly's speed "did harm in giving an impression that the carriage business was in an unfortunate condition," and that "readers of such articles in newspapers do not appreciate the distinction between high priced and cheap vehicles."

A leading and old eastern carriage builder wrote in part as follows:

"Our opinion coincides with Mr. Connolly so far as he refers to the high-grade vehicles. The tremendous falling off in the sale of all high-class horse-drawn vehicles in the last four years can be attributed only to the increased use of automobiles, and it seems to be the universal result among the users of automobiles that having once taken up the auto for pleasure purposes they lose all interest in horse-drawn vehicles, and the carriage dealers not only lose the sale of carriages which these users of automobiles formerly purchased, but they have also to contend with the vast number of slightly used carriages thrown on the market to be dispensed of at a sacrifice.

"A large number of firms having carriage manufacturing plants in Amesbury, Mass., took up the manufacture of automobile bodies with the result that to-day there is not more than 10 per cent of the high-grade vehicles being manufactured in Amesbury as compared with ten years ago, but notwithstanding this fact the town is more prosperous than ever before in its history and the future outlook is very encouraging. Every mechanic is at work and there is a serious shortage of skilled help. The factories here have at the present time contracts enough on hand to carry them well into the spring, turning out the various types of automobile bodies.

"With these facts in view it certainly seems that Mr. Connolly was amply justified in making the statement to the C. B. N. A. convention as to the outlook of the manufacturer who is engaged in making high-grade horse-drawn vehicles. We do not believe, however, that the manufacturer of the cheaper grade vehicles will suffer in any such degree because of the fact that the cheaper grades are used mostly in sections of the country where the roads are not adapted to use of automobiles to the extent which they are in New England, Central and Middle Western States."

The Dow Tube Co., to make vehicles, etc., capital $8,000, has been incorporated by Alex. Dow, of New York. The home of the corporation is Phoeniola, N. Y.

RETAILERS MAKE COMPLAINT.

Convention Discusses Practice of Some Manufacturers in Selling Direct.

The National Federation of Retail Implement and Vehicle Dealers' Association at their recent annual election chose Joseph Baker, of El Paso, Ill., as president. The convention was held at Chicago, October 20-22. The other officers are: Vice,president, O. Gossard, Oswego, Kan.; directors, C. L. Glasgow, Nashville, Mich., and P. T. Rathbun, Springfield, O.

One of the results of the federation's labors the past year was the adoption of a uniform and non-conflicting schedule of convention dates by the various State and other associations enrolled in the federation. The committee appointed to select topics for discussion at the coming conventions offered the following as the most important subjects now before the association: Cost accounting; salesmanship; manufacturers' and jobbers' retail branches; dealer's contracts with manufacturers; automobile trade for implement dealers.

Secretary H. J. Hodge announced in his report that during the year there has been added to the membership of the federation two associations, New York State Retail Implement and Vehicle Dealers' Association and Southern Illinois Retail Implement and Vehicle Dealers' Association.

The secretary reported further that his records showed fewer changes among the dealers the past year than for several years. He said: "I reported to a previous meeting of this federation that the change was from 35 to 40 per cent. I am safe in reducing this estimate to 25 per cent. It is less than 20 per cent in the Western Association. Something is responsible for this satisfactory condition of affairs, but I am convinced that the agitation of the costs proposition has had its influence."

The secretary also stated: "Reports come that manufacturers and jobbers are maintaining a large number of branch retail stores. This matter should receive attention at this time. If no protest is made the number of these stores, if successful, will be increased, and while only a few manufacturers and jobbers are branching out in this way now, others will follow their lead and gradually the implement business will drift away from the regular retail dealer and be handled by the manufacturer direct."

Later the convention acted upon the question of the jobbers maintaining branch retail stores. A conference was held between the Federation Committee and representatives of the Dealers' Associations Committee of the National Association of Agricultural Implement and Vehicle Manufacturers. The Manufacturers' committee was represented by W. S. Thomas, chairman; F. H. McAdow, and W. J. Evans, secretary of the implement manufacturers' association.

Mr. Thomas deprecated such policy on the part of any manufacturer and said he would investigate and bring the subject to the attention of the manufacturers. It was reported that the parent office of one of the companies whose branch house had been charged with operating a number of branch retail stores had given out the information that the retail branches complained of were owned not by the company, but by employes who had seen fit to invest their money in the retail business. The subject was referred to the joint Arbitration Committee of the manufacturers' association and the dealers' federation.

President Baker named the following members as a committee to represent the federation at the annual convention of the National Association of Agricultural Implement and Vehicle Manufacturers, the same committee to represent the federation at the conference with the representatives of the trade press: Joseph Baker, C. L. Glasgow, H. J. Hodge, E. P. Armknecht and Harry Mead.

The following resolutions of the convention, in part, follow:

Certain jobbers and manufacturers are starting branch stores for the purpose of retailing their own goods. We denounce this system as unfair, unwise and unbusiness-like. If continued it

Digitized by Google

means the disruption of trade relations and the elimination of the retail dealer and his best friend—the smaller manufacturer.

On behalf of our members we request the jobbers and manufacturers to furnish with each invoice a bill of lading which shows the correct shipping weight of the article and the proper classification and rate from shipping point to destination, and be so explicit as to description of articles, number of pieces in each bundle, etc., as will enable consignee readily to check and identify the shipment when received.

The commission contract still used by certain manufacturers and jobbers with dealers not worthy of credit is placing dealers with capital invested at a great disadvantage. It is evident that this condition is responsible in no small degree for the continued use of canvassers. Therefore be it resolved that the commission contract and carrying clause are trade abuses which should be eliminated.

We again protest against the idea of the Carriage Builders' National Association in considering the elimination of all warranty on vehicles. We believe that every purchaser of any article is entitled to receive assurance that the article he buys is a good merchantable one and worth the price paid for it and if it proves to be otherwise the seller should make the same good to him.

Believing this to be true we feel that a vehicle should be warranted to be as represented and that the purchaser should be protected by the manufacturer by a warrant covering all parts for twelve months from date of sale to user. That the manufacturers should be protected by proper system of vouchers for defective parts and that in every instance the defective part should be returned to manufacturer if he so desires.

The following delegates were present:

Michigan Retail Implement and Vehicle Dealers' Association: C. L. Glasgow, W. L. C. Reid, F. M. Witbeck, L. C. Mount.

Wisconsin Retail Implement and Vehicle Dealers' Association: F. R. Sebenthall, D. W. Allaby, George Ewen, O. E. Schearer.

Tri-State Vehicle and Implement Dealers' Association: P. T. Rathbun, George P. Wagner, T. H. Elder.

Western Retail Implement and Vehicle Dealers' Association: F. K. Allen, T. G. Wiles, O Gossard, Harry Mead, H. J. Hodge.

Iowa Implement and Vehicle Dealers' Association: W. D. Hoyt, E. P. Armknecht.

Illinois Retail Implement and Vehicle Dealers' Association: Joseph Baker, J. A. Montelius, Jr., James Ryan, J. E. Dabler, W. L. Derry.

Retail Implement Dealers' Association of South Dakota, Southwestern Minnesota and Northwestern Iowa: M. D. Thompson, J. E. McDougall.

Minnesota Retail Implement Dealers' Association: C. M. Johnson, C. I. Buxton.

North Dakota and Northwestern Minnesota Implement Dealers' Association: George F. Carpenter.

In his annual address President C. L. Glasgow said among other things:

We freely and gladly admit that the present business outlook is most encouraging. On the whole crops are abundant, prices good, manufacturers crowded with orders, transportation companies adding to their equipment heavily, dealers are busy and when such commercial activity with profit is engaging the attention of the people they have less time to devote to the careful study of business ethics, and therefore, if for these reasons we are like the physician, whose services are a little less in demand by reason of the health of the people, it should be to us a cause for gratification rather than regret.

OF INTEREST TO PATENT HOLDERS.

A restraining order has been obtained by the Goodyear Tire & Rubber Co. from the Federal Courts preventing the Rubber Tire & Wheel Co., and the Consolidated Rubber Tire Co. from suing the customers of the Goodyear Company. The injunction is a sequel to the litigation involving the Grant solid tire patents, in which both sides have won victories in different courts. In granting the injunction the judge delivered a lengthy opinion in which he laid down a new law of importance to manufacturers. He held that manufacturers who have defeated a patent may protect their customers from being sued, even though the customer does not buy the complete article from the manufacturer. A decision by the United States Supreme Court had previously offered the same protection, but only to customers who bought the complete article.

The Henley Carriage Co. has been incorporated in Lynchburg, Va., with a capital stock of $10,000.

MAKING GOOD AUTO SPRINGS.

Investigation and practice of the members of the Association of Licensed Automobile Manufacturers as to the springs which carry their car bodies and frames make a very interesting tale. Many grades of metal, domestic and foreign, have been used, including chrome nickel steel and steel containing chromium combined with tungsten, vanadium, etc. With special alloy steel, a very superior article can be produced provided the requirements of heat treatment are followed. By some it is advanced that silico-manganese steels will endure longer than high carbon steels. Springs of certain specific analyses, says Automobile, are to-day being made which will successfully withstand any test to which they would be subjected.

It is contended by some producers that a spring with the least arch, that is, the nearest flat, is the safest spring, if enough room for the proper amount of deflection is reserved. This is on the theory that the greater the arch the greater the fiber strain in a spring.

In connection with front springs, one authority states they should, to preserve proper resiliency, not be thicker than their width; should be fairly stiff, with a maximum deflection of not over one-quarter of an inch per hundred pounds; not off-centered, and have the front eye set higher than the rear eye not less than one-half inch, this latter preventing the car from ducking. That in rear springs, where the problem is relatively easy, the length and width should be as great as possible, if made scientifically as to the spacing of the leaves, the length of the taper and the grading of the steel. There can be made a spring that will take certain dimensions under a given load, and ten thousand other springs which will take the same dimensions under the same load, but it is essential that they have a large number of leaves of special grade steel, specially tempered, with an absolutely correct grading, so that there will be spring play from the center of the eye to the center of the spring, and, too, it is important to have the strains equal in the section of all leaves.

AFFECTED BY SELDEN RULING.

The result of the decision upholding the Selden auto patent will be the issuing of limited licenses by the Association of Licensed Automobile Manufacturers. Such is the latest report from good authority.

This limited license will not entitle holders to membership or revenue in the A. L. A. M., but will protect them generally.

The terms on which the limited licenses will be issued will be the payment of royalty on all cars which have been produced and which may be produced, at the same rate paid by all the present licenses: 8-10 of 1 per cent. New licenses will be required also to adhere rigidly to the exclusive agency agreement of the A. L. A. M. As they will not, immediately, at least, become members of that organization, they will, of course, escape payment of the $2,500 initiation fee.

WISCONSIN'S CONVENTION.

Between 500 and 600 visitors are expected to be in La Crosse, Wis., from December 14 to 16, inclusive, when the Wisconsin Retail Implement & Vehicle Dealers' Convention assembles there.

The five sessions held heretofore have been in Milwaukee, but on invitation of the Board of Trade, manufacturers and jobbers' association, and Mayor Sorenson, the organization decided to go to La Crosse this year.

GOODRICH PROSPERING.

The B. F. Goodrich Company's business is growing fast. Two new buildings, shown to have a tax valuation of $44,000 and $21,000, respectively, were built at the Akron (O.) headquarters of this big rubber concern.

Digitized by Google

Hold Interesting Convention.

Implement and Vehicle Manufacturers Were Busy at Chicago.

Protection for the retailer, the recommendation of the adoption of cost plans that would "automatically regulate sales prices," and condemnation of the factory retail house were among the chief results of the National Association, Agricultural Implement and Vehicle Manufacturers' meeting. This convention was held at Chicago October 27-29. The next meeting, that for 1910, will be held in St. Louis, Mo.

The sentiment of the convention on business matters affecting the members was expressed in the resolutions, which follow, in part:

In our opinion, the fixing of retail selling prices by the manufacturers is impossible, owing to the difference in freights, local conditions and varying cost of doing business. The main elements in fixing retail prices are the first cost of the goods and the cost of doing business.

Therefore we recommend to the Dealers' Federation the very great importance of following up and putting into effect everywhere the plan suggested by the general committee of the trade on the subject of the cost of doing business, which would automatically establish the proper retail price in every locality, leaving to the dealer a legitimate profit.

The issuance of incomplete bills of lading is a source of considerable annoyance, and we refer this subject to our Executive Committee, with a view to having our Traffic Committee do everything in their power to have bills of lading show weight, classifications, rate and explicit description of the goods.

We favor the establishment of a bureau for the exchange of credit information among our members.

The establishment by manufacturers of branch stores for the purpose of retailing their own goods, would mean, finally, the disruption of trade relations and the elimination of the retail dealer, and we are opposed to the establishment of such houses, believing that to the retail leader belongs the retail trade.

We urge the creation of a single and final court of patent appeals, and our members are requested to take this up directly with their representatives in Congress.

The resolutions also endorsed the work of the Conservation Commission, a ship subsidy and improved non-partisan consular service.

W. B. Brinton presided over the sessions of the convention. The delegates were welcomed to Chicago by E. J. Brundage, corporation counsel, to whose speech E. D. Metcalf responded. In his annual address President Brinton declared:

We have before us three or four years, to say the least, of unprecedented business prosperity, and I have a notion that within six months those of you who have not taken the precaution to secure the raw material which will be required in the construction of your various tools and implements will be paying two cents or more for steel. I do not mean to have you think for a moment that I belong to the steel trust—nothing of the kind. It is simply a condition of things that is staring us in the face.

New Chief's Advice.

H. M. Kinney, chairman of the Executive Committee, in his report said:

It appears to me that one of the most important reforms for this association to aim at is the shortening of our terms of sale. The buyer of our goods will "rise up and call us blessed" one of these days if we will shorten our terms and make the price accordingly. The ability of the consumer to pay cash for his purchase is fully demonstrated in the automobile trade, and the two eight billion dollar crops of 1908 and 1909 have put a different complexion upon things, and we ought to recognize it.

In his annual report Secretary W. J. Evans said there had been a net gain of 20 members during the past year. The organization is living within its income, and is in good shape financially.

President Brinton before adjournment of the opening session made a brief speech on the problem of costs and profits confronting the trade, and declared:

While you are thinking the matter over you may just as well consider that in the very near future the labor that you are now employing will be necessarily compelled to ask you for more money to enable them to buy the necessities of life. There is absolutely nothing which they must necessarily have in their families for existence but what is 25 to 40 or 50 per cent higher than it was two years ago. If you gentlemen have a hope that you will be able to keep your labor at the same wages you have been paying in the past, you will be very much disappointed before the year closes. Those things you may just as well take into consideration when you are thinking over the cost situation and the things that enter into the cost of your goods.

The committee on national legislation declared against the proposed parcels post on the ground that it would concentrate business in large centers and in houses that circularize the country to the injury of the small town dealer. The committee also suggested Federal control of corporations, and endorsed reciprocity in foreign trade.

The report of the association counsel, Messrs. Bulkley, Gray and Mone, was very thorough and covered much ground, going into detail upon all matters. The attorneys said there was a chance that the new Federal corporation income tax law was unconstitutional, and advised the members as follows:

Every step taken by members of this association toward compliance with the law should be taken under protest. There should

President H. M. Kinney.

be no voluntary reports, no voluntary statements, no voluntary payments, but each report, statement or payment should be made under protest.

Another important feature which must be borne in mind in connection with this tax and these reports is the condition of the laws of many of the States which now require all corporations to annually make a report to their assessing body of the value of their capital stock, their income, their property, the amount of property on which they are taxed, the amount of their indebtedness, etc., by which the State authorities can ascertain the value of the property for taxing purposes. The making of one report to the State and the making of another report to the Federal Government, and the right of the Federal Government to inspect all documents, books and papers, etc., to ascertain the property and the income therefrom, may lead to very disastrous results.

In conclusion, so many taxes, conditions, restrictions and obligations are imposed by the Federal Government upon the corporations, and by the State Government upon the rights of corporations to do business, that it is a serious question if the time is not fast approaching when those of you who can had not better surrender your corporate existence and organize a general or a special co-partnership. If the Federal Government would give to those of you who buy your product for manufacture in one State, assemble it and sell it as a manufactured product in another State, a license protecting you from interference of State regulations, you could well afford to intrust your affairs to the Federal Government.

But until the Federal Government gives you something for the taxes which it proposes to exact from you, and leaves to the State the right to burden you with any and all kinds of restrictions, taxes and other inconveniences, including the denial to you

Digitized by Google

of justice, can you afford to stand these burdens? You have either got to fight, and fight hard, beginning now and continuing, or you will have to succumb to the inevitable and surrender your charters.

As to Contracts.

Upon the question of uniform contracts the lawyers reported as follows:

Over a year ago the chairman of your committee on attorneys and litigation suggested the advisability of advocating the adoption by the different members of branches of the association of contracts which would be similar in form in certain provisions and conditions. Before the last convention a pamphlet was published containing several forms of contracts, simple, but so drawn as to make practically three features of the contract uniform, namely:

First.—The eliminating of all words of agency and inserting in lieu thereof a direct order from the dealer to the manufacturer for the purchase and shipment of goods from the factory, and making it a condition that the contract be accepted at the factory. This was for the purpose of making the transaction, as far as the contract could make it, an interstate commerce transaction and thus avoid the snares of the State laws.

Second.—The second feature was a simplified form of reservation title clause. We appreciate that this clause in some jurisdictions is valid; that in other jurisdictions it is invalid; that under certain conditions it is valid in all jurisdictions, that under certain conditions it is invalid in all jurisdictions. But the preponderance seemed to be in favor of the validity of such clause as between the manufacturer and the dealer, if the manufacturer sought to retake his goods before the sale thereof by the dealer or the interference of a court in bankruptcy, and in some instances even after the bankruptcy court had seized the dealer's property.

Third.—The third feature in the contract was the question of the uniform warranty. The contracts of many members of the association have a warranty which is long and complicated, and in many instances these long and complicated warranties do not exclude implied warranty. The warranty which we attempted to draw, after much study, was a short and comprehensive one and excluded all implied warrants.

Many of the members of the association have written regarding this warranty. Some individual members have submitted their contracts, and wherever possible we have suggested these uniform features which we believe to be for the benefit of all of the members. Some of the allied associations whose members are largely members of this association have been trying to establish a uniformity in some of these particulars in their contracts.

We believe, and recommend to the association, that the manufacturers of each particular line should adopt a contract uniform in so far as possible, as herein suggested. That which may apply to one branch may not exactly apply to another branch. And it is for the wagon maker, the plow maker, the thresher manufacturer, the carriage manufacturer, and others, each to adopt some sort of a contract with the provisions above referred to substantially uniform.

Touching upon the many obstacles against carrying on interstate business counsel advised the manufacturers as follows:

Interstate Trade Obstacles.

In years past we have said so much about a corporation in one State complying with the laws of another State that we hesitate to again express our opinion; but new features are always developing. Each State is adopting some new regulation regarding foreign corporations. It is well-known by the members of the association that we have always advocated, wherever it is possible, non-compliance by the corporation of one State with the laws of another State; that the business of a corporation created in one State should be so conducted in the other States that it would be protected by the commerce clause of the Federal Constitution.

This may seem difficult, but as was heretofore defined by the Supreme Court of the United States and by many of the other courts, interstate commerce is the buying and selling and exchanging of commodities; it is the intercourse between citizens of the different States. The commerce clause of the constitution gives the transaction protection from the time the commodity is purchased in one State until it is sold and paid for in another State. A citizen has a right throughout the Union to sell his merchandise or commodities without restriction or reservation, except that he may be taxed by the State where his property is located. That tax, however, must not discriminate against that merchandise. A corporation under the protection of the commerce clause of the Federal Constitution manufacturing a product in one State may sell that product in another State and is protected by the commerce clause of the Federal Constitution until the purchaser has paid for the commodity sold by the manufacturing corporation.

The commodity may be liable for a general tax when located in a foreign State when that tax does not discriminate against the commodity because it is manufactured by a corporation in another State. But any restriction, however small or insignificant, imposed upon the ligitimate article of interstate commerce is a violation of the commerce clause of the Federal Constitution if it in any way discriminates against that commerce by reason of the article being manufactured in a foreign State. In some instances it is a violation even if it does not discriminate against an article manufactured in a foreign State. That is to say, that an article manufactured in one State and sold by its manufacturer in another State, the agent who sells it, or the party who disposes of it, is not liable for any license tax, privilege tax, or occupation tax, although citizens of the State may be liable for such a tax where they are selling the commodity produced in their home State.

The Committee on Freight Transportation made a report reviewing many questions arising during the year, and declared in favor of the following policy:

We believe (1) in giving the Interstate Commerce Commission in its discretion the power to prevent the advancing of existing rates without previous hearing; (2) in giving to shipper the right to route his freight from point to point of origin to destination; (3) the protection of carriers of rates quoted in error subject to certain restrictions and under the jurisdiction of the commission; (4) the insertion of rates in all bills of lading; (5) in the right of carriers to organize and maintain traffic associations for the publication of rates provided such associations are under direct and constant supervision; (6) in the adoption of uniform car demurrage rules, provided the rules include the average plan which is the only one that affords protection to shippers and receivers of freight; (7) in the prompt adjustment of claims of all kinds against carriers; (8) in requiring carriers to furnish complete expense bills to consignee covering each and every shipment; (9) in requiring carriers to notify shippers of refused or undelivered shipments; (10) in the strict enforcement of the Carmack Amendment to the Hepburn Act holding the initial line responsible for loss and damage to freight in transit.

The Southern Classification Committee was criticized for tardy recognition of shippers' petitions, and the general freight agent of the L. & N. Railway was pronounced "a czar" by the secretary.

The Committee on Terms and Credits made the following recommendation:

If the manufacturers of whom we buy material can sell for cash or on short time; if the farmer who buys our product can sell for cash; if other goods can be marketed for cash or on short time, there is no good reason why the implement business cannot be conducted on the same terms; and your committee recommends that an effort be made to place the implement and vehicle business on a 60-day basis with proper datings on seasonable lines, say 60 days from March 1 on implements, and such datings as the manufacturers of other lines may determine upon as fair to themselves and to their customers. If the customer wants more time and is worthy of credit, it may be given at the legal rate of interest. With such terms the manufacturer can sell his goods for what they are worth, and if it is necessary to sell "time" as well, the customer will pay for that at its proper price.

The New Officers.

The election of officers resulted in H. M. Kinney, of the Winona Wagon Co., Winona, Minn., being chosen president. The remainder of the roster follows:

President: Paul E. Herschel, Peoria, Ill. Vice-presidents: A. Hirshheimer, LaCrosse, Wis,; W. R. Harrison, Massillon, O.; W. H. Stackhouse, Springfield, O.; F. L. Maytag, Newton, Ia.; Joseph D. Oliver, South Bend, Ind.; J. F. Lardner, Rock Island, Ill.; W. I. Parks, Kendallville, Ind.; W. T. Garrison, Columbia, Pa.; Duane H. Nash, Jr., Millington, N. J.; D. W. Spencer, Batavia, N. Y.; C. L. Peavy, Port Huron, Mich.; P. D. Middlekauff, Peoria, Ill.

Chairman of Executive Committee: E. D. Metcalf, Auburn, N. Y.

Executive Committee, to serve one year: C. S. Brantingham, Rockford, Ill.

Executive Committee, to serve three years: F. C. Johnson, Springfield, O.; J. A. Craig, Janesville, Wis.; H. M. Wallis, Racine, Wis.

The Memorial Committee paid tribute to the following mem-

Digitized by Google

bers who passed away during the previous twelve months: Chas. E. Whitman, St. Louis, Mo.; Henry H. Pattee, Monmouth, Ill.; Solomon E. King, Ottawa, Ill.; Levi B. Carle, Janesville, Wis.; M. W. Kouns, Upper Sandusky, O.; Henry E. Robinson, Richmond, Ind.

ADVANCE VEHICLE PRICES.

That Is the Opinion of Secretary of Tri-State Dealers Association—New President Is T. J. Turley.

At the annual convention of the Tri-State Vehicle and Implement Dealers' Association, held in Cincinnati the last week of October, Secretary Rathbun declared that vehicle prices will move up. He said that the cost of material in buggies is getting higher and that the manufacturers simply have to raise the prices to make money.

President T. H. Elder, of Kenton, O., presided over the meetings. The attendance was very large, and the exhibits were handsome and varied, numbering 170. The following new officers were elected:

President, T. J. Turley, Owensboro, Ky.; first vice-president, C. C. Chenault, of Mt. Sterling, Ky.; second vice-president, John C. Schultz, Wooster, O.; third vice-president, Will J. Bulleit, Corydon, Ind.; directors, L. W. Kattman, of New Knoxville, O., H. A. Yowrey, of Litchfield, Ky., and F. J. Geist, of Brookville, Ind.

NEW YORK SHOW INTERESTING.

The Twentieth Annual Convention of the National Carriage Dealers' Protective Association held at New York was generally regarded as a success. The banquet was attended by 152 members, and the exhibits at the Grand Cerntal Palace were interesting.

Among the attractive displays were those of C. H. Russell & Son, Clarkesville, Va., and the Tiffin Wagon Co., Tiffin, O. The Peabody Buggy Co., of Fostoria, O., showed the Storm King, a new style of winter carriage, and the Columbus Wagon Co., Columbus, Pa., announced that all Hudson-Fulton parade trucks were built by them. The Michigan Buggy Co., Kalamazoo, Mich., reported business booming in the Middle West, and increased sales over previous years. New machinery has been installed by the Automatic Axle Co., of Lancaster, Pa. The Flint Wagon Co., Flint, Mich., has abandoned the manufacture of farm wagons and is devoting its time to carriage manufacture and to autos. A sale of 25 carloads of wagons in two days by the Parry Mfg. Co., of Indianapolis, Ind., was reported by that organization. The Eadis Vehicle Gear Co., of Newark, N. J., had an interesting exhibit.

F. M. Grady, of Butte, Mont., traveled the longest distance to attend the convention.

Henry M. Duncan was toastmaster at the banquet. Among the speakers were President J. N. Palmer, J. C. Barry, I. S. Remsen, E. G. Hutchinson, M. H. Tanner, Benj. Briscoe, Judge Wm. B. Green, F. H. Gowan, Mr. Wright.

GOODYEAR GETS BIG CONTRACT

The largest tire contract made in the United States in the history of the automobile business was concluded recently between the Goodyear Tire & Rubber Company and the Buick Motor Company. The Goodyear quick detachable tire and rim will be used as regular equipment on Buick cars for 1910. It is estimated that Buick Company will make 40,000 cars the coming season.

William J. Tickner & Son have awarded the contract for their new carriage building to be erected in Baltimore, Md. The building will be a three-story brick structure, with modern improvements and will cost about $24,000.

PAINT PRICES ARE HIGHER.

Oil and Varnish Men, Like Carriage Builders, Oppose Forest Waste.

The annual convention of the National Paint, Oil and Varnish Association was held in Philadelphia October 13-15. These new officers were chosen:

President, M. S. Platt, Warren, O.; first vice-president, L. T. Minehardt, Denver, Colo.; second vice-president, George C. Morton, Boston; secretary, L. L. Drake, Chicago; treasurer, J. Gordon Taylor, Cincinnati, O.; auditor, Edward T. Longstreth, Philadelphia.

An increase of 24.5 per cent in the cost of paints and similar products during the last ten years was reported by A. M. Parks for the Committee on Allied Interests.

Resolutions favoring a parcels post system were adopted; also resolutions advocating the improvement of inland waterways, to afford a natural medium of transportation. These further stated that the only preventive of absolute dictatorial control of freight rate lies in the fostering care of competitive railroad lines, and the association indorsed efforts of individuals and organizations working toward this end.

Strong resolutions were adopted protesting against the wilful waste of national resources, and urging Congress to pass legislation to insure a more judicious use of the timber and turpentine forests. Incidentally, the socitey places itself on record as endorsing the fight for conservation made by Chief Forester Gifford Pinchot.

TRUNK LINES DENY RATE ADVANCE.

With reference to protests of shippers against anticipated advances in rail rates President James McCrea, of the Pennsylvania lines, says:

"Recently a letter signed by fifteen trades bodies was received, in which it was stated that C. C. McCain, in his pamphlet entitled 'The Diminished Purchasing Power of Railway Earnings,' had brought to the front again the question of a general advance in freight rates, particularly in official classification territory. It was also assumed that Mr. McCain was speaking officially for the railroads of the Trunk Line Association.

In the first place, no question of general advance in freight rates, or in classification, is now under consideration or contemplated by the railroads in the territory in which our lines operate.

"In the second place, you are under a misapprehension, as in the pamphlet referred to Mr. McCain does not speak for the carriers, but solely for himself.

"It is true that Mr. McCain is chairman of the Trunk Line Association, but he was also at one time auditor of the Interstate Commerce Commission, and has had an opportunity to give some study to the questions with which he has dealt in his pamphlet, and some of the railroads have distributed a number of these pamphlets for the same reason that we have distributed other pamphlets without necessarily agreeing with all the facts or deductions dealt with therein, but for the purpose of general education of railroad men as well as the public, in problems affecting the carriers and the public."

The foregoing is interesting in view of the fact that the C. B. N. A. Convention endorsed the shippers conference resolutions which were provoked by this pamphlet.

MASON CO. MOVES.

The Des Moines (Ia.) plant of the Mason Automobile Co. will be moved to Waterloo, Ia. The company has purchased the Waterloo motor works, which is a factory 100 by 300 feet and three stories high. The move will be made at once and the plant will be in full operation inside of 30 days. It is expected that the new plant will employ 300 people. The capital stock of the company will be increased to $1,000,000.

Digitized by Google

THE TRADE NEWS PUBLISHING CO. OF N. Y.

Publishers of THE HUB

J. H. WRIGHT, *President.* G. A. TANNER, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

JACOB H. KLEIN, *Technical Editor.*

REPRESENTATIVES:

J. HENRY KLUNE. J. G. TANNER.

Other Publications of Trade News Publishing Co.:

HARNESS (monthly) .....per year, $1.00

AMERICAN HARNESS AND SADDLERY DIRECTORY (annual) .....per copy, $4.00

THE HUB is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 10 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of TRADE NEWS PUBLISHING CO.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in ever, respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 25th of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

FRANCE.—L. Dupont, publisher of *Le Guide due Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

GERMANY.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

ENGLAND.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

Vital Matters.

Seldom have the subjects considered at our national conventions been so ably handled as were the matters discussed at the recent convention of carriage builders. Old and worn out subjects were handled as if they were new and familiar facts, and figures were marshalled in attractive and convincing array. The subject "Can We Save Forest Waste" was entertainingly and convincingly handled by a Government expert, and details as to possible economies were presented which carried conviction. The facts and conclusions presented ought to be put and kept where they will not be forgotten. The work of the forestry experts receives and is entitled to the highest regard of the vehicle industry.

The president's address bristled with practical points and suggestions. He properly takes advanced grounds concerning the wisdom of making the most out of the automobile opportunity.

The wagon builders were furnished a trial on the subject entitled "The Evolution of the Motor Vehicle Relative to the Wagon Builder." Its technical features added to its value. These features proved that the speaker was no dreamer and that he has gone deeply into the mechanics of his subject. He elevates motor wagon building to the level of a science, which it is, and points out the main highway over which the coming successful builders of self-propelled vehicles must walk or run. He shows the wagon builders the broad possibilities before them. He assumes then that the foundation for a great business in motor trucks has been already laid in a right motor truck chassis.

The inadequacy of profits in the carriage industry was an ably handled subject. The necessity for an energetic and determined effort to unitedly, and yet individually, meet this problem was never more forcibly presented, and the facts made a profound impression. The speaker's slogan was, know your costs and in uttering it he struck at the citadel of hurtful and demoralizing competition.

The forceful presentation of all the familiar facts that lie behind and below these three subjects cannot but influence future action. Sometimes papers are read to fill in and fill out. These subjects were handled by practical men who spoke from experience to men who knew, perhaps, as much as the speakers concerning them, but then forcible presentation sank deeply into the minds of everyone. If the time for genuine action on these matters has not arrived, it never will.

The Convention Reports.

The report of the Executive Committee of the Carriage Builders was more marked by its strong, practical suggestions than by a string of dry "resolutions." It takes the broad ground that the work ahead of the carriage builder is as great as the work in the past, and that the future of the industry opens up limitless possibilities. This is the key note of the report, and in making it such it simply keeps abreast of the trend of the hidden social and commercial forces at work. The value of still supporting technical education is emphasized. The report notes the improved relations between manufacturers and dealers as a result of the agitation on the withdrawal of guaranty, a withdrawal which, if read between the lines, it was never intended to carry into effect. The report further points out how for nearly thirty years the carriage builders have been in the forefront of the agitation for forest conservation and how they have for a like period been pioneering and stimulating the agitation for good roads.

The future of the C. B. N. A. is brighter than it has ever been despite the appearances of opposition and the development of new methods of travel which for a time seemed to threaten its long-sustained supremacy in an industry which is as old as civilization.

Will Work Out Gradually.

Some effort is still being made to shorten credits on carriages, but not with much success. The established relations between manufacturers and builders and dealers cannot be easily changed. In some localities dealers are the stronger opponents to any modification. They regard it to their advantage to be able to offer the most favoroble terms to their prospective customers. With some builders it is not so much a matter of getting their money a little sooner as it is to be sure of getting the cash when the granted term of credit expires. It is the partial payment and the renewals that is the chief sort of complaint. The habit grew when credit was an absolute necessity, and like all habits it persists after the necessity for it disappeared. Influences independent of co-operative actions by manufactories will eventually work out more harmonious relations between manufacturers and the ultimate user.

The C. B. N. A.

Much missionary work yet remains to be done to gather into the C. B. N. A. all who should be identified with it. Its long and honorable course, its representative character, its success in harmonizing what might otherwise develop into conflicting interests, all unite to make it an organization and an agency which should be maintained. The spirit and purpose which led to its organization still guide and control it. The carriage builder who can remain out of such an organization must reach his conclusion through peculiar mental processes.

Digitized by Google

An Optimistic Spirit.

The thirty-seventh annual meeting of the Carriage Builders' National Association brought with it a spirit of progressiveness which was something of a surprise in view of all the untoward influences which have been at work. Builders were there who expected to hear dolorous reports as to the future of the industry because of the invasion, as it is sometimes termed, of the automobile. The purpose was made manifest that many carriage builders will gradually enter on automobile body contsruction. It was officially said that many builders of high-priced carriages will not prosecute their industry exclusively along horse-drawn vehicles. What is now needed to furnish the impulse to carriage builders is a recognized and demonstrated standardized chassis. Those who are in close touch with the builders of the purely mechanical parts are assured that the hour is at hand when a chassis will be completed which will meet every requirement of those builders who hold some remnant of doubt as to the advisability of becoming active automobile builders.

The under sentiment and expression at the Washington meeting was that there is a wider field for the carriage builder in the future than in the past due to the new form of propulsion. And this is true. A great transformation is at hand. The luxuries of yesterday become the necessity of to-day, and in this fact is hidden the possibilities that await the vehicle industry when it siezes the opportunities now broadening out before it.

Some Pow-Wowing Needed.

The advance which was made some time ago in carriages after so much talk and apprehension has only saved builders from actual losses. That a further advance is absolutely warranted by all the facts and conditions is not denied, but is boldly asserted by builders who analyze cost of production and compare receipts at the end of the season. The auto craze scares many from asking more for their work. The well-known apathy of builders and their long demonstrated willingness to eke out an existence on the barest profits stands in the way of manly and courageous action with reference to the vehicle business of 1910, now at our doors.

It should not be overlooked that further advances in all kinds of raw material are at hand, notably in steel and lumber. Labor, under automobile shop competition, is advancing, freight rate advances are threatened all along the railroad horizon. While concerted action is difficult, if not impossible, it is certainly up to the new Carriage Manufacturers' National Association to do some quiet pow-wowing over this vital matter.

A Strong Classification Committee.

The committee of the C. B. N. A. which has been looking after the matters of freight rates and classification deserve more than the formal thanks of the association. The general benefits derived by the members are worth many fold the cost of maintenance of the organization. The new basis of the committee which it is proposed to call the Classification Committee, as is mapped out, is a sound, business-like and practical one. In this day experts are necessary in every line. It is not only necessary that shippers have right and justice on their side, but there must be personal and aggressive representation by men representing every branch of the industry who are experienced in the devious ways of traffic managers, and who are able to see from their point of view as well as their own. All the suggestions made for the future composition of the Classification Committee and for its line of conduct are good and to the point.

Uniform classification is yet a dream. There are inconsistencies to be removed, friction to be reduced and harmonies established which will place all shippers on the same level. Just classification is at the bottom of just rates. The committee has a number of vital questions coming up for settlement with the railroads. The roads are working zealously to evolve a basis and plan which will bring them the largest returns with the least friction. Besides there has been, and is, a discussion in high railroad circles looking to a general advance in freight rates.

It is more than even important that we have a fighting classification of specialists, experts who have to do with railroad traffic men and who are up to the tricks of trade that abound. Such a committee is coming, and when equipped for contests to come our shipping interests can rely upon at least a square deal.

Good Buggy Prospects.

Figures, so far as they are available, and guesses, so far as they can be safely made, all seem to bear out the assertion that the manufacturer of the lighter forms of horse-drawn vehicles is increasing. The great West, the region of buggies, was not so severely hit by the panic as the East, and there the sale of buggies and, to a large extent, runabouts, has been maintained. The larger centers of population have turned their faces and pocketbooks to the automobile, but the buggy rules in the smaller centers and towns. The sales show an increase. The estimates made for 1910 by prudent builders are highly favorable for a heavy buggy year.

The Exhibit.

Any one to look critically over the exhibit of parts and accessories at the exhibition at Washington would not have any reason to imagine that the carriage industry was suffering. The exhibits were fat, healthy and up to date. The number of exhibits was large and covered the entire field. The salesmen and representatives were there in force with polished up lines of talk, and rumor has it that they did not depart empty handed as to orders. What pleased them still better, however, was the assurances received as to future requirements.

Professor Johnson ought to feel proud of his school and his work. Both come in annually for a verbal boquet, which is as modestly appropriated as it is deserved. The school has a brighter future than ever. Its graduates make good. Indirectly it stimulates the rank and file. Its correspondence feature is susceptible of great expansion and corresponding value to hundreds, in fact thousands of young men who are finding a stimulus to effort in increasing opportunities.

Dealers in vehicles, especially throughout the West, have about made up their minds to enter the automobile business in real earnest. It is a matter of ways and means just now with a good many. The terms of automobile builders are the obstacle. Until terms are somewhat more in accord with vehicle dealers and vehicle buyers' methods there will not be a rush to handle the machine. At present the builders are able to make and maintain their own terms. Later on they will be more accessible to appeal. The factories are oversold, and with a possible output of 150,000, which will sell for close-to-cash terms, there is not very wide room for the average dealer to make much of a start. But things are changing.

Digitized by Google

C. H. A. T. Meets.

Nineteenth Annual Session In New York of Harness—Carriage Traveling Salesmen.

The nineteenth annual convention of the Carriage, Harness and Accessory Traveling Salesmen's Association held in New York City in October, was one of the most interesting in the lifetime of this organization. The annual reports showed the association to be in very good shape socially, financially and otherwise. The growth in membership was rather light, and the recommendations of the directors called for increased efforts along this line.

Mr. John F. Galvin, president of the Metal Stamping Co., of New York, and well known to the carriage and harness trade, was chosen president for 1909-10.

The convention was presided over by President V. D. Ten Broeck. In his annual address the chairman advocated active work in securing new members. The report of the directors was then submitted and among other things said:

Directors' Report.

"Nineteen years have passed away since our organization was formed, and the report of our financial office will show that the organization has been, and is, successful, but in a larger sense we ask the members to consider the work of the years as being more successful when we consider the good that has been done.

"Organization is the key to Twentieth Century success, and the C. H. A. T. renews its fidelity to the principles that first brought us together.

"The business world has recovered from the bankers' panic, and survived all the schemes that selfish politicians have thrown at the business interests we represent. Tariff is out of the way, financial legislation will soon be enacted, and differ as we may on the spirit and animus that directs these matters, yet as traveling men we well thank God that in spite of conditions our business has bright prospects.

"As traveling men we ask no favors and only want a square deal.

"The C. H. A. T. was founded to help build character. Let us continue to strive toward the goal and by our every act show the manufacturer and the dealer that our organization stands for the forward movement and never the other way.

"The law of life is the law of growth, and so we must have new members at all times. Members should carry application blanks and send to our secretary new applications.

"We urge more attention to our feature of securing positions for members. The secretary will attend to all requests of this sort, and when a position is open he should be advised in order that applicants may have the benefit."

The directors also reported the death during the past year of five loyal members: Frank Hardy, Arthur Bittong, Jas. J. Fetzer, Howard C. Tyler and John Hassett.

Secretary's Report.

Secretary L. H. Kronfeld's report had the following to say of the membership: On the roll book October 1, 1908, 341; admitted during the year, 37; making a total of 378. Resigned, 19; died, 5; leaving a membership at this time of 354, and represented as follows: Carriage, 160; harness, 41; accessory, 135; trade papers, 11; unclassified, 7. There are 38 associate members and 4 honorary members.

Further the secretary announced that $563 was outstanding in dues, and that there are 80 members who are in arrears for three years and more. Unless payment is made before January 1 these names will be dropped from the membership list.

The secretary plans to publish the Annual Chat after January 1. This will contain an account of the proceedings of the convention, and a full list of the members, excerpts from the constitution and other matters of interest.

Mr. Kronfeld said: "I have had several requests from members in good standing who are in need of positions, but in each instance I could give no encouragement owing to the failure of members informing me of firms who were in need of salesmen. This is an important feature of membership, and I ask you to please bear it in mind."

A feature of the meeting was the enthusiastic greeting accorded the new president, John F. Galvin. He was presented to the convention by a committee composed of Messrs. Kronfeld, Gowen and Bent, who took him away from a Broadway hall where he made his maiden political speech before the Order of Acorns. Mr. Galvin had received the nomination of aldermanic president just previous to the honor conferred upon him by C. H. A. T.

The new roster of officers of C. H. A. T. follows:

President, John F. Galvin, New York City; vice-presidents, F. J. Johnson, Los Angeles, Cal.; J. H. Wilber, Cripple Creek, Col.; F. Myles Brown, New Haven, Conn.; J. P. Cahill, Wilmington, Del.; H. B. Shirk, Washington, D. C.; Eliott Dunn, Atlanta, Ga.; H. B. Edwards, Chicago, Ill.; D. O. Pohlman, Anderson, Ind.; J. W. Crutcher, Lexington, Ky.; J. G. Utterback, Bangor, Me.; C. E. Tubman, Baltimore, Md.; Chas. K. Manning, Worchester, Mass.; Howard L. Cooper, Detroit, Mich.; J. C. F. Jackson, St. Louis, Mo.; John E. Hayford, Newton, N. H.; A. LeRoy Williams, Newark, N. J.; Frank A. Brown, Hudson, N. Y.; C. C. Hargrave, Lexington, N. C.; W. A. Snyder, Piqua, O.; Lewis M. Garrett, Philadelphia, Pa.; W. H. Diggs, Fort Worth, Tex.; Chas. A. Quigley, Salt Lake City, Utah; E. J. Pease, White River Junction, Vt.; Max Robinson, Martinsburg, Va.; Fredk. Kerr, Montreal, Canada.

Secretary and treasurer, L. H. Kronfeld, P O. Box 57, Mount Vernon, N. Y. Mr. Kronfeld was honored by a re-election.

Board of Directors: C. C. Hayes, chairman, New York; Chas. E. Sorin, Cincinnati, O.; W. W. Wood, Philadelphia, Pa.; J. A. Bent, New York, N. Y.; Grant Wright, Philadelphia, Pa.; E. A. McGrey, Philadelphia, Pa.; P. D. Randall, Springfield, Mass.; Chas. E. Perkins, New York, N. Y.; H. H. Sickles, Brooklyn, N. Y.; F. H. Gowen, Little Falls, N. Y.; H. E. Copeland, West Newton, Mass.

FUTURE OF LEATHER PRICES.

Widely varying opinions as to the probable future course of hide and leather prices have aroused new interest in the economy of those commodities. According to a well-written article in the Manchester (England) Guardian, the recent decision to admit hides free of duty into the United States has very materially altered the conditions, the ultimate readjustment of which is largely a matter of conjecture.

It was ostensibly to free the hide market from the clutches of the meat trust that such a determined fight was made during the progress of the Payne-Aldrich tariff to do away with the duty; but, although that struggle was successful, prices continue to advance. It is stated that this advance is due to a shortage of hides and anticipations of an enormous expansion of the demand for boots and shoes in consequence of returning prosperity. On the other hand, some contend that there is no scarcity of hides and that as a matter of fact there cannot be, in view of the great increase in the output owing to the larger consumption of meat and the dwindling, or at least stationary, demand for leather.

The position in the United States is undoubtedly the controlling factor. The value of the hides and skins used by the leather producing industry in this country is estimated at £29,000,000, of which over one-third is imported.

The international trade in hides and skins is valued at £61,000,000 per annum, India being the biggest individual exporter, with £6,000,000 worth. Great Britain comes next with well over £4,500,000, but this is only accounted for by the large reexports of foreign hides amounting to over £3,000,000 per annum.

BUCKEYE REBUILDING.

The Buckeye Rubber Co., Akron, has begun work on the reconstruction of the building recently destroyed by fire. The new mill and drying house will be three floors high and 40 by 91 feet in dimensions.

Digitized by Google

SPECIAL TRADE NEWS FROM MICHIGAN

Newsy Notes by our Correspondent Concerning Well Known Carriage and Automobile Manufacturers in the Wolverine State.

Fire in Axle Plant.—The Lewis Spring & Axle plant, Jackson, suffered a small loss from fire recently.

Capital Increased.—The Lewis Spring & Axle Co., of Jackson, has increased its capital stock from $21,000 to $350,000.

Studebaker Buys Realty.—The sale of property to the Studebaker Auto Co., near its present plant, indicates a new factory.

Plan New Style Truck.—A new style heavy auto truck will be manufactured in large quantities by Toeppner Bros., of Salzburg.

Trimming Man Busy.—J. D. Wells, of Albion, reports a good business in upholstering and carriage trimming for the past month.

Axle Co. Buys Realty.—The Timken-Detroit Axle Co. has bought 16 new lots, presumably with the intention of adding to its plant.

Detroit Plant Soon Ready.—The Paige-Detroit Motor Car Co., which was recently organized in Detroit, plans to begin the delivery of cars by December 1.

Has Bigger Plant.—In its new home at Milwaukee Avenue and the Grand Trunk Railway, Detroit, the Metzger Motor Car Co. has 8,000 additional feet of floor space.

Railway Takes Building.—The Durant-Dort Carriage Co., of Flint, has leased one of its buildings to the Pere Marquette Railway Co. to ease the blockade of freight cars.

May Move West.—E. H. Cameron, of Beverly, Mass., has been in conference with the directors of the Alma Board of Trade relative to the removal of the Cameron Car Co. from Beverly to Alma.

Buick Co. Expands.—The drop forge foundry building of the Buick Motor Co., of Flint, will be moved and enlarged. W. H. Little, factory manager, says that the new foundry will be operated day and night.

New Engine Co.—The Rotary Engine Co., of Detroit, capital $300,000, has filed articles of incorporation. The principal stockholders are: William D. C. Moebs, Frank J. Miner and Austin L. Richardson, all of Detroit.

Buy Big Factory Site.—Dodge Bros., manufacturers of auto parts, Detroit, have purchased for upward of $100,000 a big factory site on the Walter S. Harsha subdivision in Hamtramck township, just outside the city limits.

Saginaw Plant Sold.—The General Motors Co. has purchased the Jackson-Church-Wilcox auto plant in Saginaw, which is known as one of the largest manufacturers of auto parts in the country. There is talk of enlarging the plant.

Pontiac Factory Growing.—The Rapid Motor Vehicle Co., of Pontiac, has petitioned the common council of that city to vacate all the streets on the rapid addition, comprising a 30-acre tract, as it expects to cover the entire tract with buildings.

Much Increase of Capital.—During the nine months ending September 30, thirty-three companies in Detroit increased their capital stock, the increase in numbers being $11,930,000. More than $9,000,000 of this was made by an automobile company.

An Auto Side Line.—The Emergency Forge Co., of Lansing, capital $100,000, has been formed to make drop forging and other forge work, with Chas. P. Downey, James B. Seager and Schuyler as incorporators. It will be partly dependent upon the automobile trade.

Will Build Horse-Drawn Bodies.—Among the Michigan concerns recently filing articles of incorporation is the Lowell Auto Body Co., of Lowell, whose capital stock is given as $30,000. Horse-drawn vehicle bodies and seats will be manufactured, as well as those for automobiles.

Is National Garage Coming?—The Buick Automobile Co. has incorporated in Maine an auto supply and garage service to be national in scope and to protect all auto owners from extortion and overcharges. The small dealers in supplies and garage promoters look upon it as their natural enemy.

Carriage Plant Booming.—The Jackson Carriage Co., of Jackson, Mich., has been doing a lively trade the past two months and not the least active of its representatives is Z. E. Britton, of Albany, who says that the volume of his business for 1910 will considerably exceed his record for the last year.

Americans Invade Canada.—A branch of the E. M. F. Automobile Co., of Detroit, has been established in Walkerville, Ont. Another Detroit auto concern which has established a Canadian branch is the Regal Co., which will erect a $100,000 factory to supply the Canadian trade, with offices in Windsor, Ont.

Brass Works Moves.—At a public meeting of the taxpayers of Wyandotte, the conditions whereunder the Detroit Brass Works agreed to remove their plant from Detroit to Wyandotte were accepted and the company immediately began the removal of the factory. It will erect on the new site a $75,000 building and will begin producing about February 1, 1910.

New Body Factory.—The Auto Body & Specialty Co., of Flint, is building a new factory in the south end of the city and will employ about 150 extra mechanics. Special vehicle body and auto body work of all kinds will be done. The Auto Body & Specialty Co. was organized last April by C. B. Sanderson and J. C. King, both for many years in the employ of the W. F. Stewart Co.

Pontiac Factory Changes.—At a recent meeting of the directors of the Oakland Motor Co., of Pontiac, plans for business for the coming years were discussed. W. C. Durant, W. H. Little, both of Flint, and J. B. Eccleston, sales manager, also of Flint, were among those present. It is understood, but not asserted as a positive fact, that L. L. Dunlap was appointed general manager of the plant. Other appointments were spoken of as soon to be made.

Ford's Foreign Trade.—James Couzens, secretary-treasurer of the Ford Motor Co., of Detroit, has returned from a six months' tour of Europe, on which Mrs. Couzens accompanied him. The Ford Co. sold 115 cars in France this year, which exceeds the sales made by any other American company there. During the trip arrangements were completed for the establishment of a London branch at 55-59 Shrewsbury Avenue. A large increase of business both there and in Paris is looked for. Mr. Couzens praises the auto roads in the chateau country of France.

General Motors Reaching Out.—The General Motors Co., which controls 13 motor concerns and is planning to extend still more, is contemplating the formation of a big holding pool for

Digitized by Google

the control of the company's preferred stock, the pool to be effective for a period of 15 months. Holders of preferred stock are in receipt of a letter from W. C. Durant, of Flint, wherein they are asked to co-operate in the movement. The preferred stock issue is $7,000,000 and Mr. Durant says that holders of more than $3,000,000 of it are agreeable to the plan. The outcome of the attempt to control the price of the preferred stock from New York will be watched with interest in Michigan. Detroit is the logical place for the transfer of General Motors Co. stock, as the greater portion of the factories is in Detroit and other Michigan cities. Holders of common stock of the General Motors Co. on October 30 were informed that on November 15 they will receive additional common shares at the rate of 1 and 1½ for every one now held. Preferred shares have received 7 per cent dividends since the company's organization, but the common has, as yet, received no cash dividend.

The English Situation.—Henry Lewis, of London, Eng., who recently visited a brother in Pontiac, says that automobiles are displacing the horse in his country, and at a much faster rate than in America. At least, that is something for the American horse-drawn vehicle manufacturer and retailer to congratulate themselves about. He gives as a reason for this the superiority of the road-building in the old country. Mr. Lewis, however, does not suggest to the horse-drawn vehicle man that his cue should, therefore, be to oppose good roads, for fear that the auto will entirely supplant the horse. Mr. Lewis said:

"It is only a question of a few years when commercial cars will entirely displace the horse delivery. In even our smaller cities delivery by horse even now is the exception. If Americans believe that this auto delivery hasn't a future, I would suggest that they come to England where we have already generally adopted the system. It is no longer possible for a dealer who does not make quick delivery to compete with his neighbor who has a commercial car."

Mr. Lewis hasn't a great deal of faith, unfortunately for him, in American mechanical ability, and to offset the American competitors in his line has had printed on his business cards the legend, "I'm a bit of a liar myself."

MOTOR OR HORSE VEHICLE.

The Charm of a Carriage and Pair Entertainingly Set Forth—Rich With Associations and Traditions.

A very interesting article, enlarging on the charms and spectacular advantages of a carriage and pair, and drawing a comparison between horse-drawn and motor-propelled vehicles, which leaves the reader very favorably inclined toward the former, appeared recently in the Pall Mall Gazette. A considerable amount of prominence has been given to the effects of the taxicab innovation on the receipts of cabby, remarks the writer, but what is not so generally known is that the introduction of the motor brougham has had an almost equally disastrous effect on the business of carriage builders. Happily, the latter consequences have proved of a transient nature, and this is matter for congratulation, both on account of traditions and also because a carriage and pair is the most picturesque. The history of the horse-drawn carriage is rich with old associations, and its use as a private means of conveyance is a custom that dates back to a very early period indeed. It was first established by the Romans, but it was in vogue in England during the Middle Ages.

The custom, however, was confined to royalty and the nobility, but in the course of time it had become quite common. Indeed, to such an extent had it spread that a bill was introduced into Parliament in 1601 "to restrain the excessive use of coaches," but it was rejected on its second reading, to the bitter disappointment of the Thames watermen, who were most strongly opposed to the use of wheeled vehicles. It naturally told severely against their occupation, and Taylor, who was both poet and waterman, railed in prose and verse against what he described as a new-fangled practice. But, in spite of the sneers of wits and watermen alike, the fashion continued to grow, until it eventually established itself as an innovation which could not be uprooted. With the elapse of time, mechanical inventions have somewhat curtailed the usefulness of horse-drawn carriages, but for private purposes they cannot be superseded—that is, if comfort, gracefulness, and elegance are factors taken into consileration.

For, to lovers of the picturesque, the picture presented by an artistically constructed carriage drawn by a well-matched pair of horses is a feast for the eye. The spirited animals, full of life and vigor, and quivering with impatience at the restraining force which holds their impetuosity in check; the glittering harness; the coachman, ever on the alert, for it is by the touch of his hands that he must anticipate every impulse of the creatures which he controls; then the carriage, with its graceful lines and glittering with its many coats of varnish; and lastly the occupants. Each and every feature combine to form a picture, perfect in its completeness and impossible to emulate with a vehicle that is mechanically propelled.

For omnibuses, only motor 'buses. Motor vans instead of horse drays, and taxicabs and motor cars instead of hansoms and carriages. The contemplation of such a contingency is in itself sufficiently horrible, comments Saddlery and Harness, but its actuality would be still more so. Not that the motor is to be decried. As an innovation, it ranks among the most important, and in certain respects it has its own distinctive claims. But these incline to purpose of expediency. With the horse it is otherwise. It is a creature of life, and is invested with a charm that Nature alone can bestow. Thus it is that the use of the carriage must ever retain its popularity, and this partially is by no means confined to lovers of animals only. The easy motion is soothing to the nerves, and it almost invariably acts as a mental restorative. This beneficial effect is still further heightened if one acts in the capacity of driver, provided, of course, that one is capable of doing so. To sit in a smart dogcart, phaeton or buggy, or whatever vehicle it is, and control a spirited beast, quickens the pulse. The thought that the animal is gifted with such a vast superiority of strength enhances the pleasure derived from its submission, and this is still further intensified by the knowledge that the control is exercised not by brute strength, but by delicate handling. For in driving a horse of mettle, the reins should be held lightly, though firmly. Just sufficiently tightened to feel the horse's mouth, and by this means the driver establishes a perfectly controlled line of communication between the horse and himself.

CANADIAN BUILDERS FORM BIG MERGER.

News from Montreal, P. Q., tells of the consummation of the big Canadian carriage merger. Messrs J. A. Mackay & Co. were the organizers of the new merger, which is known as the Carriage Factories, Ltd.

Enrolled in this industrial organization thus far are, it is announced, the E. N. Heney Co., at the present time completing a large plant at Delorimier; the Tudhope Carriage Co., of Orilla, Ont.; the Canada Carriage Co., Brockville, Ont.; the Munro & MacIntosh Carriage Co., Alexandria, Ont.

The exact capitalization of the new company will be as follows: Authorized amount of 6 per cent bonus, $1,000,000, of which $300,000 will be issued at the present time; authorized amount of preferred stock, $2,000,000, of which $1,200,000 will be issued, and the common stock $2,000,000, of which $1,200,000 will be issued.

NEW YORK STATE MEETING.

Plans for the convention of the New York State Retail Implement and Vehicle Dealers' Association are well under way. The dates are December 2-3 and the place Syracuse.

Digitized by Google

Century Old Carriage In Use.

Reading (Pa.) Man Owner of a Relic Handed Down Through Generations.

R. J. Davis, of 1050 Greenwich Street, Reading, Pa., is the owner of a carriage close to 100 years old. This vehicle is still in active use, although five sets of tires have been worn out during the usage to date by only one of its three owners. No other repairs have been necessary. The carriage has figured in several runaways, but escaped destruction. The illustration shown herewith was made from a photo sent to Harness by Mr. Davis.

The carriage was the property of his grandfather, Andrew Davis, and was built in Philadelphia by Fulton & Walker. It was specially built for Mr. Davis, who was a portly man, weighing over 300 pounds, and cost $350.

"The material used in the construction of this vehicle," said Mr. Davis, "was of the very best. The frame work, spokes, shafts, etc., were made of hickory. The upholstering shows much skill. The seat is stuffed with hair. There was nothing counterfeit in its makeup.

OLD BUT SERVICEABLE.

"The springs are still in good condition and with care the carriage may last 100 years more. I use it every day and it rides more comfortably than any vehicle I own.

"Some years before the death of grandfather Andrew Davis, the carriage was given to his son, Frank K. Davis (my father), who was one of the Reading Railway Company's pioneer engineers. Fifteen years ago father gave it to me and it has been in my possession ever since.

"I wore out five sets of tires. How many more were rendered useless previous I cannot say, but I am satisfied that few vehicles ever stood the hard usage this one has and still remained in service.

"During all the years that this carriage has been in the family, not a single cent has been expended in repairs to the interior. Originally, it had two glass doors. These, however, were taken out by my father. The windows on the side and rear have not been disturbed.

"Since it was given to me I had several runaways and upsets, but the damage was practically nothing because of the excellent material used in its construction

"You see the old fashioned fifth wheel is still there, as are the axles. The latter are made of iron with strong hickory braces. I have been offered $150 for the old relic, but refused it. It has been in the family so many years and given such excellent service, that I would not think of parting with it."

GROWTH OF AUTO INDUSTRY.

Some Interesting Statistics On the Business Built by the Horseless Carriage Men.

It is said by students of industrial problems that next to the telephone, now a necessity, there is not in the history of manufacturing development any other industry that has to its record such a phenomenal growth as the automobile industry.

Some figures furnished by the National Association of Automobile Manufacturers indicate the extent and growth of the automobile industry, as shown in the following table:

	Cars built.	Val. of product.
1910	*200,000	*$240,000,000
1909	82,000	98,400,000
1908	55,400	83,100,000
1904	20,100	40,200,000
1899	600	1,290,000
1895	70	157,500

*Estimated.

Of the 200,000 cars planned for 1910, 165,000 will be pleasure cars, 30,000 will be of the high-wheeled buggy type, and 5,000 will be business vehicles.

Figures for 1910 are considered conservative.

To-day cars in private ownership approximate 270,000 with a list value of $403,000,000. By August 1, 1910, they should exceed 475,000 with a list value of $640,000,000, or one car for every 150 of population.

These figures, together with the facts that no less than $200,000,000 capital is invested in factories and equipment, that over 100,000 men are employed and that the annual payroll approximates $90,000,000, indicate the economic position the automobile industry is beginning to assume.

It is felt that overproduction is not a menace. Two facts justify this confidence, argue the auto men: First, the great middle class and farmers are entering the market; second, exportations are increasing annually, while importations are diminishing yearly 20 to 30 per cent.

In spite of the panic, which caused the failure of 54 companies, the industry showed such recuperative powers that the yearly increase in the product of 1907 and 1908 was maintained. The present year, in spite of the lack of confidence of manufacturers regarding disposition of the output, has proved the greatest in the history of the industry; about 90 per cent of the year's product was marketed by June 1.

That the automobile industry has grown so fast and had, during the time of the acute financial panic which struck rich men the hardest, not experienced a crushing setback was only due to the advertising spirit of the manufacturers and dealers. From its beginning this industry has worked up a constantly growing demand by advertising. No other industry has in the last few years done such a tremendous amount of advertising as the automobile manufacturers have done. They have actually been the largest advertisers of the last ten years.

A PRETTY CATALOGUE.

The F. O. Pierce Co., New York City, has issued an attractively illustrated catalogue of its paints, enameled dressings and varnishes. The catalogue describes special automobile colors and shows some products of superior brilliancy and durability.

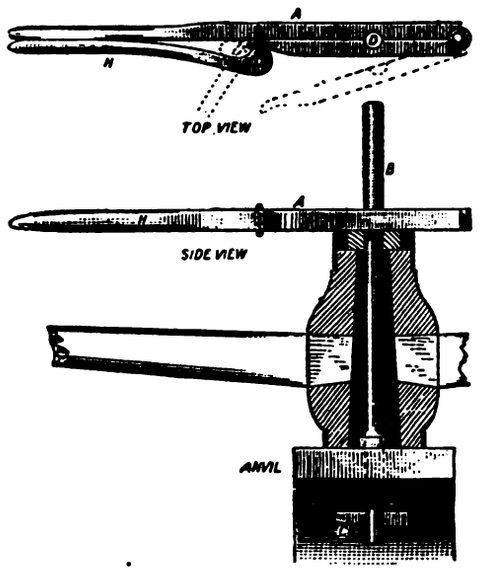
Digitized by Google

Pictured Ideas

Description of New Mechanical Devices Gathered From Various Sources.

HOLDING TOOL FOR WHEELWRIGHT.

In the illustration is shown a tool to be used on the anvil to hold wheels while taking out bolts and to bolt them. The wheel can be fastened in a few seconds. The lever (A) is made from an old buggy top joint. The joint is closed and a one-half-



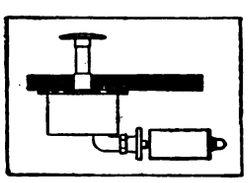
Clamping a Wheel to an Anvil

inch hole (D) drilled and a thread cut to fit the rod B. The rod B has a hole in the end for a pin to go through to hold it to the anvil. The handle H operates the lever A so it can be put on or taken off quickly. One turn of the lever will tighten the wheel.

FOOT AUTO HORN FREES STEERING HAND.

A signal blowing device for automobiles that is sounded with the foot in the same way the motorman of a street car sounds his bell, and to which can be attached either an auto horn or a whistle, has been placed on the market. It consists of a box under the floor of the automobile in which air is compressed by striking a brass plunger with the foot. The air thus compressed is driven through a tube to the horn or whistle, and the result is a clear, strong blast.

An automobile horn blown by a rubber bulb has several disadvantages, the greatest being in the fact that when careful



steering is required the horn is also necessary and one hand must be taken from the steering wheel in order to sound it.

MAKING A GOOD EVENER.

One general criticism made of many manufacturers of wagons and farm machinery is that they usually make eveners and other like appliances to look well, many times regardless of the fact that the strength of the article is sacrificed for the sake of its appearance.

In the manufacture of eveners, it may be noticed that on new wagons and other farm tools the eveners and double trees are sometimes constructed as in Fig. 1. As will be seen, this method is faulty, from the fact that the grain of the wood tends to separate, like the leaves in a leaf spring not properly constructed. In Fig. 2 it will be seen that the grain of the wood cannot sepa-

Fig. 1

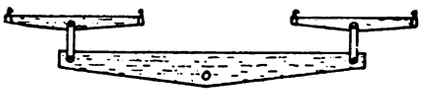
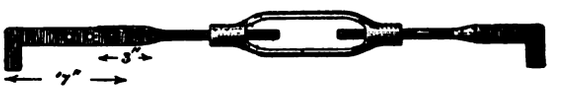


Fig. 2.

rate, because the back edge of the evener is made straight; this tends to compress the fibers of the wood; while the evener in Fig. 1 would have the exact opposite effect, because the fibers of the wood, the evener being beveled on the back, would be pulled apart.

TO BRING RIMS TOGETHER.

A Louisiana wheelwright, Theo. Melancon, advances a suggestion which he believes may help his brother smiths and



For use on wheel rims.

wheelwrights. It is a handy tool, one size for buggies and one size for wagon bodies. Sometimes they go on hard, for they must fit to the spokes. The one shown is made for runabout rims. With this tool rims can be easily brought together.

PERSONAL MENTION.

Robert W. Griffith is now city salesman at Little Rock, Ark., for the Trainor Carriage & Implement Company. He was formerly connected with the Little Rock Carriage Company.

Clarence Lowell, once a successful carriage manufacturer in New Bedford, Mass., has been adjudged mentally irresponsible and committed to the hospital for the insane.

Mr. A. J. Eley, of Barnesville, Ga., who has been manager of sales for the Rock Hill (S. C.) Buggy Co. in the Carolinas for the past three years, has been transferred to Georgia and Florida, succeeding J. M. Cochran, who has taken charge of the home office as manager of sales. R. D. Topp, of Atlanta, Ga., has succeeded Mr. Eley, and Mr. S. E. Conyers, of Montgomery, Ala., is still manager of sales for Alabama and Mississippi.

A number of the employes of the Mott Wheel Works, Utica, N. Y., presented one of their associates, John Schindler, about to go to Flint, Mich., with a suitably inscribed loving cup. Mr. Schindler will be employed with the Weston-Mott Company.

Mrs. George W. Killian, 60 years old, wife of a prominent Lancaster (Pa.) carriage manufacturer, died from paralysis in her pew at St. Paul's M. E. Church, the fatal attack coming just as services were beginning.

VANADIUM VARNISHES.

The description of the metal for which the Vanadium varnishes are named, says Vanadium is a powerful dryer, "rare and difficult of extraction." A really good varnish may justly be called "rare," and anyone who tries to combine gums and oil in varnish making will find the product "difficult of extraction," so difficult that Valentine & Company have been more than fifty years traveling the road to perfection. That is a long time, and much ground toward the goal of perfection must have been covered, so Vanadium seems a good name for the latest additions to the group of Valentine's varnishes.

Digitized by Google

NO RADICAL CHANGES IN 1910 MODELS.

Many New Ideas in Bodies, Artistic Lines Supplanting the Cumbersome Ones of Last Season.

The Atlanta Auto Show, held the week of November 8, the first of its kind in the South, has taken away from New York City the glory of being the first city to display the new models for the coming season. Standard makes of cars of both licensed and unlicensed manufacturers have been on exhibition.

A majority of the new cars at Atlanta were duplicates of the same makes of the current season. Of drastic alterations in types there were none. Except in a few instances the constructors, by lack of change, showed satisfaction with previous work, not only as regards mechanical details, but in the outward appearance of cars.

There is a slight tendency toward greater wheel base, but the extreme of last year has not been exceeded, and the increase lies generally with cars that might have been termed "short." No well-known firms, it would appear, have been swayed by the vogue of the light car into giving up the manufacture of their large models. Some, on the other hand, are producing lighter models than previously, catering thus to popular demand. The big car, however, seems to be here to stay, and the greater the production of the opposite type the more strongly will it appeal to those who can afford the maximum of luxury in cars.

In bodies there are many new ideas, while artistic lines supplant the cumbersome outlines that detracted from the attractiveness of many of the 1909 cars. The most striking change is in runabouts, which show either the novel gunboat body or a tendency in that direction. These rounded bodies with smooth sides make for ideal touring, obviating the dust nuisance to a considerable degree.

Mechanically there are few features in the cars exhibited at Atlanta that can be termed novelties. No abnormal long stroke motors were shown, the general run being actually or nearly square. The thermo-syphon system of water circulation is gaining new adherents annually, quite a number of makers dispensing this year with the pump in its favor. Pump and splash lubrication divide honors, there being few that use other methods.

The shaft drive has become so common as to be almost a standard feature of modern automobiles, but this was the case a year ago. Ignition by magneto is nearly as common, in some cars being the only method utilized. Instead of being an extra, the magneto has become an item of regular equipment on nineteen cars out of every twenty. In other ways, except for minor alterations of parts, the car of 1910 is practically a replica of the current year's model.

It does not necessarily follow, of course, that the New York shows will develop nothing radical. Almost any manufacturer with something entirely new would rather look for approval to the metropolitan public. There have been rumors of striking innovations for the coming year, but time will probably show that they are in the nature of body changes and that the present power plant has not been materially bettered.

What the year has developed abroad will be known shortly, as the Olympia show in London, the only big one of the year in Europe, is under way. The last exhibition there had the "silent" Knight motor as its one big feature, and that had been previously shown in America without creating any sensation, although its good points had not been demonstrated. This year the novelties are likely to be in the way of light cars at low figures. America will be represented at the Olympia show, but not to a striking extent.

WESTERN IMPLEMENT DIRECTORY.

The Western Retail Implement and Vehicle Dealers' Association has just issued a very convenient directory of the trade. The book contains a list of the regular dealers in towns where the association is represented, and is of handy side-pocket size. This is the ninth edition of the work.

CARRIAGE DEALERS TO BE GUESTS AT AUTO SHOW.

Following the custom inaugurated last year, the American Motor Car Manufacturers' Association will again extend special invitations to the automobile and carriage dealers of the country to visit the Grand Central Palace show opening on New Year's Eve. It was proved last year that carriage dealers throughout the country are well situated to act as automobile agents, and many of these agencies that were taken at the show last January have proved extremely successful.

For the coming show twenty-two hundred carriage dealers will be invited, and with the thousands of automobile agents who will make their annual trip to the metropolis at the time of the show a very large professional attendance is assured. The exhibits this year will cover an acre and a half, which includes every available foot of space in the big building.

AUTO SHOW BIGGER THAN EVER.

The very last inch of available space in Madison Square Garden has been allotted for the purposes of the tenth annual show under the auspices of the Association of Licensed Automobile Manufacturers to be held January 8-15. Secretary M. L. Downs is being besieged daily for more space, and this demand is greater and more insistent than ever before. By further ingenious engineering, there will be more floor space available than last year and the decorative effects are to be still a bit more magnificent than ever.

The principal attraction that will be relied upon to hold the attention of the automobile public will be the standard cars of the old and well-known makers. Along with the runabouts, with the fanciest, biggest, highest-powered and highest-priced touring cars, and with the mother trucks and wagons, will be a complete assortment of the smallest type of motor vehicle, the motor cycle.

ACTIVITY AMONG NEWARK TANNERS.

Several of the Newark (N. J.) tanners have recently made additions to old plants and established new factories. Both M. Straus & Sons and E. S. Ward & Co. have enlarged. P. Rielly & Son and J. H. Ladew Company are erecting new plants. The George Stengel Company, Inc., has just completed a large brick extension. L. M. Smith & Sons report completion of a new concrete tan yard, and the Seton Leather Company are planning to make their present factory bigger.

CARRIAGE MAN LOSES ROLL.

As Thomas F. Foley, treasurer of the James Pullar Carriage Company, was leaving the Hartford (Conn.) Trust Company two men attacked him and snatched a roll of $1,000 in bills which he was tucking away in an inside pocket. One of the men was arrested, but he refused to give his name or say anything about his confederate, to whom he threw the money. The second man escaped with the cash.

BUGGY PLANT FLOODED.

When the bands around the big tank on the third story of the Kauffman buggy plant at Miamisburg, O., bursted they liberated about eleven thousand gallons of water, weighing many tons. The water poured in a torrent on the roof of the one-story stock room, breaking the roof and walls of the building. The employes did heroic work in saving the valuable goods in this room.

The Rogers Guaranteed Cushion Wheel Company, manufacturing and dealing in all classes of vehicles, capital $1,000,000, has been organized by President Joseph E. Chase, Portland, Me., and others.

Digitized by Google

CHANGES IN CARRRIAGE-AUTO LINE.

The Anderson Carriage Company, of Detroit, has purchased the Elwell-Parker Electric Co.'s plant in Cleveland. This purchase represents an outlay of about $400,000 and gives the Detroit concern one of the largest manufacturing institutions for electric auto motors and car parts in the world.

The Lagerquist Carriage Company, of Des Moines, Ia., is preparing to build a new two-story factory to begin the manufacture of automobiles. At first the business will be conducted on a small scale and increased as trade grows. The new building and equipment will cost about $10,000, not including the machinery.

The stockholders of the Cortland Wagon Company, of Holley, N. Y., have voted to increase the amount of capital stock $200,000, making it $600,000. The company will begin the manufacture of automobile delivery wagons on a large scale.

C. P. Kimball & Co., of Chicago, manufacturers of limousine automobile bodies, electric carriages and vehicles, have become owners of the 400 feet frontage at the southwest corner of Michigan Avenue and East 39th Street. On the site will be erected the largest building in the Middle West for the class of manufacturing in which the Kimball concern is engaged. The building and ground will represent an investment of $500,000, of which about $77,000 is in the land.

The Rae Eleceric Vehicle Co., of Springfield, Vt., has bought a site for a new factory and will start construction very soon.

The Milburn Wagon Co., of Toledo, O., will make the bodies for the electric autos, which the newly organized Ohio Electric Car Co. will market. This means the establishment of a body making industry in connection with the Milburn, which will build bodies for gasoline touring cars and limousines as well as for electrics.

TEMPORARY AXLE PLANT SHUT DOWN.

The Dalzell Axle Co., of South Egremont, Mass., has shut down its axle plant for an indefinite period. In doing so it announces that it has in stock and will continue to fill orders for an assortment of full and improved collinge from 1¼ to 1½, and in light axles, double collar and half patent fan steel, with both wrought and cast boxes, from 1⅛ down to ¾. The reason for the shut down is, as the company announces, a decline in demand for fine carriage axles. The company's customers are for the most part building auto bodies instead of coaches.

SOLD TO CREDITORS.

Thos. J. Kauffman, receiver for the Kauffman Buggy Company, of Miamisburg, O., filed a petition in the Common Pleas Court recommending the sale of the plant to Dr. H. B. Lyons and other creditors for $18,500. These creditors hold claims of $67,000 against the company. The assets were appraised at $97,442.39 at the time th ereceiver was appointed a few months ago, the liabilities then being $10,000 less. The present resources and liabilities are given as $106,388.59. It is understood the factory will be transformed into an automobile plant.

FORM AUTO INSURANCE COMPANY.

With a capitalization of $1,000,000 the Automobile Insurance Company of America has been organized at Indianapolis. D. M. Parry, of the Parry Automobile Co., is president; L. N. Litauer, of New York City, former Congressman, vice-president. Among the directors are Harvey Garber, of Columbus, O., Democratic national committeeman.

OBITUARY

Jacob N. Miller.

Jacob N. Miller, one of Bellefontaine's pioneer citizens, died October 2. Mr. Miller was born September 15, 1834, in Stark County. After spending some years on a farm he decided to join his four brothers in this city who were engaged in the carriage business. This firm was known as the Miller Carriage Factory, and remained in business for over 45 years. He leaves a widow.

Herbert William Farnam.

Herbert William Farnam, who was born at Stone Church, N. Y., 67 years ago, being a son of Chester Farnam, the pioneer wagon maker in that community, died September 30 at his home in Louisville, Ky. Mr. Farnam learned the wagon making trade from his father and when he became of age went to South Bend, Ind., where he obtained a position in the Studebaker wagon factory. From there he went to Louisville, where for 25 years he was the head of a department in the Louisville Wagon Company's factory. He leaves a widow and three grandchildren.

L. A. Hull.

L. A. Hull, of St. Johnsbury, Vt., aged 46 years, for the past 40 years a carriage maker and well known throughout northern Vermont, was found dead in bed October 17 by his wife, who dreamed during the night that he was dead. Heart disease was given as the cause.

Charles A. Fischer.

Charles A. Fischer, Pittsburg, aged 78 years, manager of the L. E. Lamar Carriage Building Co., died October 10 as the result of an operation for appendicitis. Mr. Fischer was born in Germany and came to Pittsburg in 1882. For many years he had been identified with Case & Co., and later he organized the C. A. Fischer Wagon Co., of which he was president and manager for several years. In 1905 the firm dissolved partnership and Mr. Fischer since then had been manager of the Lamar Company. He leaves a widow and five grown children.

Frederick Siebert.

Frederick Siebert, agead 68, a prominent wagon manufacturer of Pittsburg, Died October 27. Mr. Siebert was born in Butler County and came to Pittsburg in 1859. He learned the wagon building trade and later took up the business which he continued for 35 years. He leaves six children.

David M. Northrup.

David M. Northrup, aged 86 years, died at his residence, Akron, O., October 28, of exhaustion. The deceased was a retired carriage manufacturer and had been a resident of Akron for the past 20 years. He was born in Charlton, New York, and at the age of 30 he started a carriage factory in Jonesville, N. Y., which he operated for 25 years. Three children survive.

George Lesswing.

George Lesswing died in Buffalo, November 5, He was born in that city 37 years ago, and was one of the sons of the late Peter Lesswing, who for many years conducted the carriage and wagon business on Ellicott Street. He succeeded his father's business and at the time of his death, together with his brother Henry Lesswing, conducted the business under the name of Peter Lesswing's Sons. He leaves a widow and one daughter.

Charles S. Dunbar.

Charles S. Dunbar died at Shelton, Wash., November 4. He was formerly a resident of Eaton Rapids, Mich., having been engaged in the blacksmithing and wagon making business there from the pioneer days of the town until he went west a few years ago.

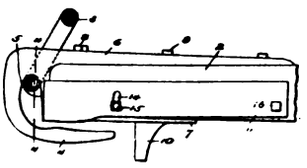
The Hackney Wagon Co. is about to erect a spring wagon factory in Wilson, N. C.

Digitized by Google

Recently Granted Carriage Patents

Wagon Tongue. Edwin Gunderson, Scandinavia, Wis. No. 936,125. Patented October 5, 1909.

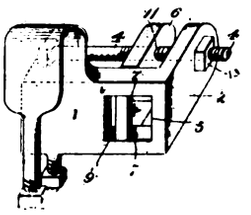
A tongue head formed with a hook, means for attaching the tongue head to the wagon tongue so that the hook will project beyond the end of the tongue and side plates secured to tongue formed with flaring portions that project on each side of the



hook whereby the neck yoke ring may be inserted and removed from hook when in an inverted position, but not when in an upright position.

Anti-Rattler Shaft Coupling. John B. Forster. No. 936,230. Patented October 5, 1909.

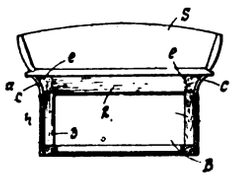
An anti-rattler shaft coupling comprising a slotted back plate having lugs on its ends with orifices through the lugs, a slidable member fitted to and guided by the slot in the back plate, and



provided with a threaded aperture, and a bolt extending through the apertures in the lugs and member with its threads registering with the threads of the aperture in the slidable member.

Wagon Seat Riser. Robert N. Collins, St. Louis, Mo. No. 936,414. Patented October 12, 1909.

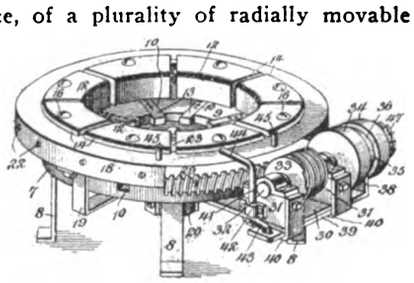
A metal riser for wagon bodies composed of an outer vertical wall having a bottom bead formation, terminal tapering extensions, inwardly folded portions at the extensions conforming to



the general formation of the outer wall and spaced therefrom by the bead formation aforementioned, outwardly deflected wings carried by the folded portions, and an upper flange adapted to be inserted below the seat for the body.

Tire Setting Machine. David R. Evans, Florence, Ala. No. 936,435. Patented October 12, 1909.

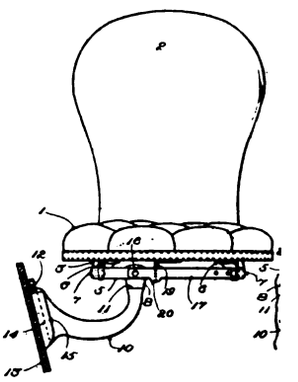
A combination with a supporting table having radial slots in its upper face, of a plurality of radially movable compressing



jaws mounted thereon having inwardly extending portions sliding in the slots, a rotatable compressing ring mounted on the table and surrounding the jaws, the inner face of the ring being provided with a series of inwardly projecting cams, one for each jaw, and operating against the same, springs for retracting the jaws against their inward movement by the cams, and gearing mounted on the base of the machine engaging with the compressing ring to rotate the same.

Vehicle Seat. Judson Benson, Amesbury, Mass. No. 936,513. Patented October 12, 1909.

The combination with a seat, a bar or carrier to which the seat proper is hinged with capacity to be swung vertically, and a sup-



port on which the bar or carrier is mounted with capacity to be turned horizontally, of a spring actuating locking device acting normally to lock the seat from turning horizontally out of position for use, and a projection carried by the seat proper and caused by the upward swinging movement of the latter to positively disengage the locking device so as to render the seat free to turn horizontally.

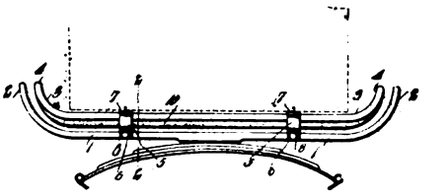
Vehicle Axle. James Hustan, Havana, Ill., assignor of one-half to David Schoonover, Havana, Ill. No. 937,530. Patented October 19, 1909.

A vehicle axle comprising a main section, an extensible spindle carrying section, a rack and pinion device for moving the spindle

carrying section longitudinally on the main section and a set screw for securing the spindle carrying section in adjusted position.

Vehicle Cushion. Jacob E. Moseman, Donaldsonville, La. No. 937,628. Patented October 19, 1909.

The combination with a spring supported carriage, of an auxiliary device arranged between the springs and the body of

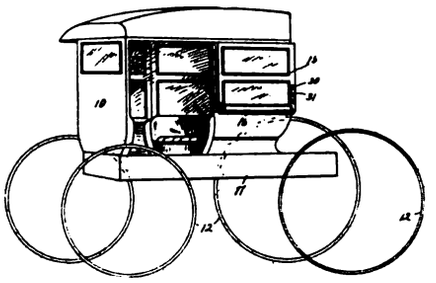


the vehicle, the device comprising a pair of bars arranged in superposed relation, the lowermost of which is adapted to be connected with the spring and the uppermost to the body of the vehicle, a pneumatic cushion secured to one bar on the face adjacent to the other bar, and U-shaped springs having one arm secured to one bar and the other arm to the other bar and normally retaining the bars in spaced relation.

Digitized by Google

Vehicle Top Door. Frederick E. Heylmann, Noblesville, Ind. No. 936,892. Patented October 12, 1909.

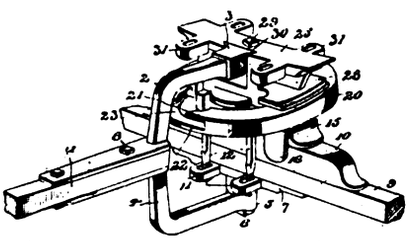
A vehicle top having a side opening, a door for closing the opening consisting of an upper rigid frame portion suitably hinged to the vehicle top at the side of the door opening, and



a vertically movable spring roller curtain mounted at the lower end of the rigid frame portion and which when drawn down forms the lower part of the door, and means for holding the curtain portion of the door in a lowered position, whereby when the curtain portion is rolled up and the door is swung open it will not come in contact with the wheels of the vehicle.

Fifth Wheel. William True, Fairfield, Neb., assignor to W. H. Skitling, Fairfield, Neb. No. 937,196. Patented October 19, 1909.

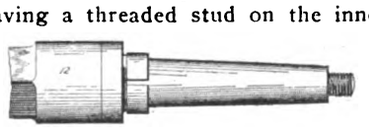
In vehicle running gear the combination of an axle, a fifth wheel connection mounted thereon and comprising a head block, an iron arranged beneath the axle and having a vertical opening enlarged at its upper end, a reach, an upper brace secured to the reach and extending upwardly and forwardly thereof and terminating in a head which is snugly fitted in a recess of the head



block and interlocks therewith, a lower brace secured to the reach and extended downwardly and forwardly and terminating in a sleeve, and a headed fastening mounted in the sleeve and having its head portion fitted in the enlarged portion of the opening formed in the iron located beneath the axle.

Vehicle Axle. David N. Marler, McKinley, Mo. No. 937,316. Patented October 19, 1909.

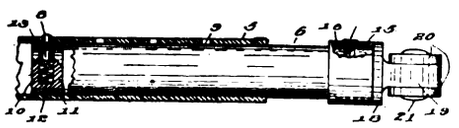
The combination with an axle provided with a threaded socket, of a spindle having a threaded stud on the inner end thereof



engaging the socket, a collar bearing against the end of the axle, and a second cylindrical collar outside of and in spaced relation to the first collar, the second collar being provided with a pair of oppositely disposed grooves forming lubricant channels and adapted to receive the lugs of a spanner.

Whiffletree. Thomas S. Moffett, Almira, Wash. No. 937,317. Patented October 19, 1909.

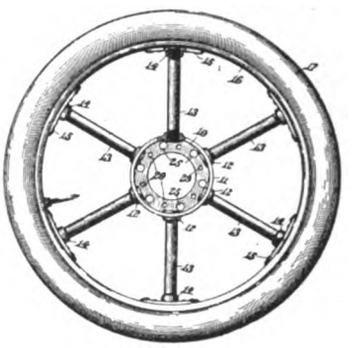
In an extensible whiffletree comprising a tubular main bar having a series of holes, and open at both ends, extension bars



mounted in opposite ends of the main bar, and having recessed blocks in their inner ends, latch pins movable in these recesses and projecting to enter the holes in the main bar, shoulders formed on the latch pins adapted to engage the inner faces of the extension bars, to limit their outward movement, and springs in the recesses underneath the latch pins.

Supplemental Wheel for Motor Cars. Arthur E. Whitney, Winchester, Mass. No. 936,750. Patented October 12, 1909.

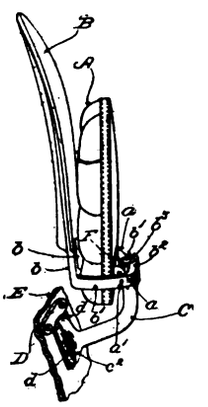
A supplemental wheel for motor cars having a central flanged annular member provided with a cylindrical flange projecting therefrom at right angles to its outer face, a tire supporting



rim, a yielding tire upon the rim, and a plurality of tubular spokes between the rim and the flange of said annular member and rigidly secured to both rim and flange, the annular member being provided with means for securing it to one of the supporting wheels of the car.

Detachable Seat for Automobiles, etc. James R. Graves and Judson Benson, Amesbury, Mass. No. 937,595. Patented October 19, 1909.

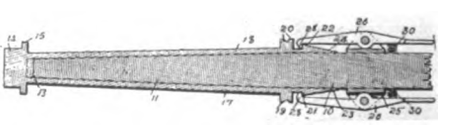
The combination with a supporting arm having the pin of the back having the skeleton frame comprising the opposite side



portions extending down below the upholstered part of the back and provided with the horizontally extending side arms, between which the rear portion of the seat descends when the seat is turned up, the cross bar joining together the front ends of the side arms, the seat provided beneath with lugs located at the opposite sides thereof and arranged to extend down alongside the respective side arms, and the pivotal pins passing through the lugs and the side arms, whereby the employment of lugs or other projections rising from the cross bar is obviated and the lugs of the seat are hidden and shielded by the side arms.

Vehicle Wheel Retainer. Francis O. Patten, Norwalk, Ia. No. 937,171. Patented October 19, 1909.

The combination of an axle, a spindle thereon, a rim at the inner end of the spindle, spindle and rim being formed with

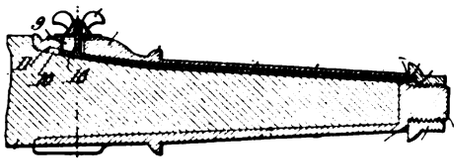


longitudinal grooves, a retainer comprising a head at its outer end and two retainer members designed to enter the grooves in the spindle, and rim members thereon designed to enter the grooves in the rim and form a continuation of the rim, and means fixed to the axle for engaging the members.

Digitized by Google

Locking Device for Axle Nuts. Thomas W. Caudle, Dayton, Tenn. No. 937,924. Patented October 26, 1909.

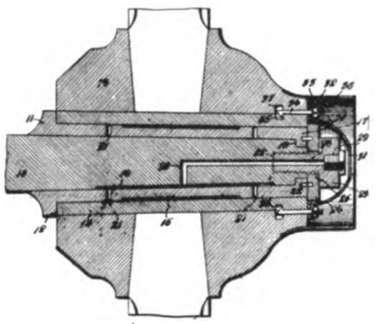
A skein having an opening in its top adjacent its inner end; a nut to engage the outer end of the skein; a rod slidably mounted in the skein and arranged to engage the nut against



rotation, the rod being provided at its inner end with a shank to slide in the opening in the top of the skein; and means carried by the upper terminal of the shank for clamping the rod to the skein.

Axle Skein. Elmer D. Hassenplug, Greenville, Pa. No. 937,936. Patented October 26, 1909.

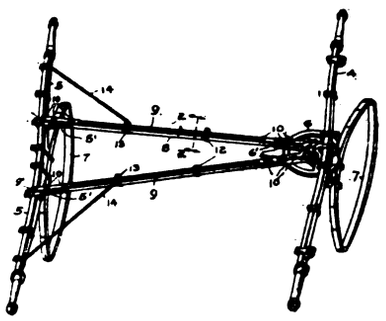
The combination with an axle having a channel upon its periphery and a passage extending inward from its outer end to communicate with the channel, of a skein disposed upon the axle



and having lateral passages communicating with the channel therein and formed with a circumferential holding channel extending entirely around its periphery intermediate lateral passages and the ends of the skein, an axle box mounted upon the skein, and means mounted upon the axle for retaining the parts in position thereon.

Vehicle Reach. Matthew R. Hull, Connersville, Ind., assignor to Rex Buggy Company, Connersville, Ind. No. 937,940. Patented October 26, 1909.

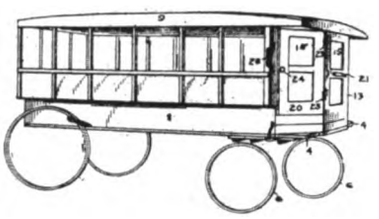
In a vehicle, a fifth wheel having extensions in pairs for the attachment thereto of a reach, a rear axle, a rear reach strap, a reach comprising a wooden top member having a longitudinal under the side groove and a steel reinforcing rod in the groove, the rod having its ends flattened and perforated, the rear flattened portion being bent across the end of the wooden reach



member, the front end of the reinforced reach being inserted between the pair of extensions from the fifth wheel, the rear end of the wooden member of the reach being in contact with the rear reach strap, a clip securing the reinforcing rod to the wooden member of the reach, other clips uniting the wood and metal reach members, and bolts securing both wood and metal members of the reach to both members of the pair of the fifth wheel extensions at one end of the reach and to the rear reach strap at the other end of the reach.

School Wagon. Thomas H. Parry and William J. Byers, Indianapolis, Ind., assignors to Parry Maunfacturing Company, Indianapolis, Ind. No. 937,953. Patented October 26, 1909.

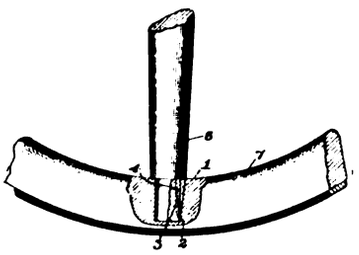
A body having parallel side walls, a front wall narrower than the distance between the side walls, oblique walls connecting



the side walls with the front wall to form a vestibule, a door in one of the oblique walls, a driver's seat located in the vestibule, doors at the rear end of the body for the entrance and exit of passengers, and means near the driver's seat for opening and closing the rear doors.

Spoke Fastener. William L. Jett, Frankfort, Ky. No. 938,149. Patented October 26, 1909.

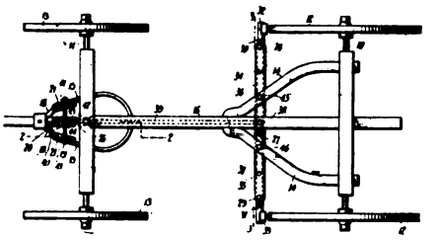
A spoke fastener, comprising a concavo-convex wedge having formed on its concave face an elongated flange extending longi-



tudinally of the wedge and pointed at its top to form a barb, the flange being substantially wedge-shaped in cross section and tapering to a point at its lower end.

Wagon Brake. Edward A. Johnson, Lovell, Okla. No. 938,241. Patented October 26, 1909.

In a device comprising the running gear of a vehicle including the forward axle hounds having their side members converging forwardly, a tie rod extending transversely through the axle hounds, a draft tongue having a longitudinal slot slidably engaging over the rod, tongue hounds connected to the tongue and bearing between the axle hounds, the tongue hounds con-



verging forwardly and bearing against the inner faces of the axle hounds, having transverse slots corresponding to the slot of the tongue and slidably engaging the rod, a standard depending from the tongue, a brake beam having brake shoes adapted to engage against the rear wheels of the running gear, a push rod connected between the depending standard and the brake beam, a guide member adapted to be connected to the forward axle of the running gear and through which the push rod passes, and a spring arranged to maintain the tongue and its hounds yieldably in their forward position.

It is said that differences as to policy and management of the Carriage and Wagon Workers International Union have arisen between the national president and the national secretary-treasurer. It is said that there are two factions, one headed by Secretary J. H. Brinkman, of Washington; the other by President Robert Hungerford, of Toronto. President Gompers, of the A. F. of L., has been appealed to.

Digitized by Google

RECENTLY GRANTED PATENTS OF INTEREST TO THE CARRIAGE INDUSTRY.

932,234.—Brake for the Steering Wheels of Vehicles. T. G. Allen, London, England.
931,716—Tire. W. H. Bachtel, Canton, O.
931,717—Cushioned Wheel. W. H. Bachtel, Canton, O.
931,719—Wagon Body. M. C. Bauer, Toledo, O.
932,241—Vehicle Spring. F. Berger, Philadelphia, Pa.
931,989—Tire. J. A. Bowden, Los Angeles, Cal.
931,990—Vehicle Spring. J. N. Brewster, New York, N. Y.
931,729—Adjustable Axle Cutter. O. J. L. Byers, Santa Rosa, Cal.
931,999—Flexible Rim Vehicle Wheel. J. Corrigan, assignor of one-third to P. Cramp and one-third to D. M. Thompson, Rockledge, Pa.
932,113—Foot Warming Radiator for Automobiles. E. M. Field, Jr., assignor of one-half to G. C. Andrews, Minneapolis, Minn.
931,925—Draft Equalizer. A. Hines, Wasco, Ore.
932,126—Automobile Wind Shield. H. F. Holbrook, assignor to Holbrook-Singer Company, New York.
931,767—Vehicle Brake. W. H. Kirk, Peoria, Ill.
931,879—Automobile Tire. C. E. La Fleur, Philadelphia, Pa.
931,936—Automatic Dump Wagon. P. N. Lindskog, Tacoma, Wash.
932,158—Ammunition Wagon. W. Mayer, assignor to Fried. Krupp, Aktiengesellschaft, Essen-on-the-Ruhr, Germany.
931,786—Wagon Brake. W. C. Moors, Owensboro, Ky.
932,310—Pneumatic Wheel Tire. J. Neff, Sr., West Hoboken, N. J.
932,312—Motor Vehicle. L. G. Nilson, Philadelphia, Pa., assignor to W. B. Strang, New York, N. Y.
932,318—Manufacture of an Elastic Cellular or Spongy Material for Use as a Filling for Vehicle Tires, Cushions, buffers, Upholstery and the like. F. Pfleumer, Dresden, Germany, assignor to Pfleumatic Syndicate, Limited, London, England.
932,320—Combined End Gate and Step. C. J. Plan and W. H. Dorland, Inver Grove, Minn.
932,058—Vehicle Body. E. H. Remde, assignor to Baker Motor Vehicle Company, Cleveland, O.
932,333—Vehicle. C. F. Schmelz, assignor to New Departure Manufacturing Company, Bristol, Conn.
932,339—Head and Rib for Vehicle Canopies. W. J. Slyder, Troy, O.
931,893—Automobile. U. S. Snyder, Canton, O.
931,899—Propelling and Steering Apparatus. F. Tompkins, New Dorp, N. Y.
932,195—Street Sweeping Vehicles. A. Verschuren, Antwerp, Belgium.
932,216—Transmission Gear. J. M. Wilderman, St. Louis, Mo.
932,081—Wheel Construction. R. B. Woodworth, Pittsburg, Pa.
931,981—Automobile Combination Lock. M. L. Yuster, assignor of one-half to O. B. Smith, Rochester, Ind.
932,843—Variable Speed Power Transmission. L. G. Bayrer, Hartford, Conn.
932,969—Spare Wheel for Motor Cars and the like. F. R. Dennison, Oamaru, New Zealand.
932,976—Resilient Wheel. J. Edman, assignor of two-thirds to A. M. Hovland and one-third to O. N. Nelson, Minneapolis, Minn.
932,980—Combined Shovel Board and End Gate. W. A. Giermann, Blencoe, Ia.
932,551—Road Vehicle. J. Hopper, Fulham, England.
932,862—Vehicle Wheel. W. L. Howard, Trenton, N. J.
932,876—Detachable Rim for Pneumatic or other Tires. M. A. Lemercier, , assignor to Societe des Jantes Amovibles, Paris, France.
932,489—Vehicle Spring Structure. J. P. Murrey, assignor of one-half to E. L. Thurston, Cleveland, O.
932,639—Draft Attachment for Vehicles. C. V. Paul, Sheridan, Ore.
932,807—Wagon Pole. S. C. Paulson, Minneapolis, Minn.
932,814—Change Speed Gearing. L. A. Saussard, Paris, France.
932,815—Casing for Pneumatic Tires. J. H. Selberling, Jonesboro, Ind.
933,007—Automobile Carriage. T. J. Van Pelt, State Center, Ia.
932,932—Spring Whiffletree. F. R. Willson, Worthington, O.
40,249—Design, Hub Cap for Automobiles. G. W. Dunham, assignor to Olds Motor Works, Lansing, Mich.
933,049—Vehicle Wheel. A. E. Beall and C. F. Skellenger, Clinton, Ia.
933,691—Antirattling Thill Coupling. S. N. Burdsall, Dayton, O., assignor of one-half to I. Cornwell, Northumberland, Pa.
933,418—Device for Timing Wagons. E. F. Chandler, Brooklyn, N. Y.
933,694—Means for Igniting and Controlling Vehicle Lamps. A. A. Clark, Baltimore, Md.
933,293—Vehicle Axle. C. T. Cullison, Worthington, Ind.
933,708—Vehicle Wheel. S. W. Higgins, assignor of one-half to F. H. Farnsworth, Detroit, Mich.
933,076—Shock Absorbing Apparatus. M. Houdaille, Paris, France.
933,463—Sleigh Runner for Vehicle Wheels. J. Karssen, Holland, Mich.
933,715—Pneumatic Tire for Automobiles and other Vehicles. C. A. Lewis, assignor of one-half to W. A. Diboll, Denver, Colo.
933,380—End Gate Fastener. W. W. Meyer, Stewart, Minn.
933,106—Tire Remover and Replacer. H. M. Owens, San Francisco, Cal.
933,110—Tire Tread. C. L. Rempes, Akron, O.
933,350—Lamp Attachment for Vehicles. G. S. Sherman, Great Neck, N. Y.
933,496—Wind Shield. J. H. Sprague, Norwalk, O.
933,680—Vehicle Brake. B. P. Trice, assignor of one-fourth to A. E. Anderson, Clarksville, Tenn.
933,140—Whip Socket. A. R. Tuttle, Sterling, Neb.
933,405—Lap Robe Holder. H. F. Tyrrell, Burghill, O.
933,510—Sleigh Knee. H. and H. Wesle, Medford, Wis.
933,514—End Gate for Wagons. B. M. Wilhite, Gordon, Neb.
933,686—Block for Vehicle Springs. T. Wright, Jersey City, N. J.
934,264—Friction Clutch Mechanism for Automobiles and for other applications. A. Balloca, assignor to Company Itala, Fabbrica di Automobili, Turin, Italy.
934,043—Coupling for Power Transmission in Motor Vehicles. H. E. Coffin, assignor to Chalmers-Detroit Motor Company, Detroit, Mich.
934,048—Wagon Box Corner Iron. J. B. Cross, Akron, Colo.
934,144—Steering Gear for Vehicles. E. N. Daniels, La Fargeville, N. Y.
933,748—Tire Protector. D. Day, Hume, O.
934,152—Wind Shield. E. Flagg, New York, N. Y.
934,159—Spring Wheel, F. N. Gibb, Little Rock, Ark.
934,067—Front Axle Connection for Vehicles. A. J. Goyette, assignor to T. E. Daly, Springfield, Mass.
933,834—Tire Setting Machine. H. T. Henderson and H. M. Lourie, assignors by mesne assignments, to National Hydraulic Tire Setter Company, Keokuk, Ia.
934,178—Vehicle Wheel. L. Inglee and C. M. Hart, Amityville, N. Y.
934,187—Detachable Wheel Rim. C. Kindscherf, assignor to Continental-Caoutchouc & Gutta-Percha Compagnie, Hanover, Germany.
934,189—Swingletree Attachment. W. A. Koch, Ringtown, Pa.
934,408—Wheel. W. S. Laughlin, assignor of one-half to W. Dahlquist, Eckman, N. D.
933,997—Suspension Spring System for Automobiles. C. A. Lieb, New York, N. Y.
934,089—Vehicle Tongue. M. R. Lunn, assignor to O. and J. B. Atkinson, Adrian, Mo.
934,334—Wagon Box Lifting and Dumping Device. J. F. Myers, Hiawatha, Kan.
934,341—Wheel for Road Vehicles. G. S. Ogilvie, Woodbridge, Eng.
934,416—Wheel for Motor Cars, etc. G. S. Ogilvie, Woodbridge, Eng.
934,211—Speed Limiting Device. W. D. Pomeroy, Norwood and A. L. McHugh, Cincinnati, O., assignor to Bullock Electric Mfg. Co.
934,016—Transmission Gear for Automobiles and other machinery. L. T. Rhoades, Phoenixville, Pa.
934,109—Whip socket. J. W. Veit and J. N. Higgins, Wapakoneta, O.
934,117—Drive Gear for Motor Vehicles. J. A. Welton, Canal Dover, O.
933,806—Constructing Axle Skeins for Vehicles. J. E. Wolcoxan, South Bend, Ind.
933,807—Spring Wheel. H. J. Wildhagen, Palastine, Ill.
933,870—Change Speed Gearing. A. M. Wolf, New York, N. Y.
934,789—Attachment for Whiffletrees. H. A. Bierley, Portsmouth, O.
934,595—Vehicle Reach. C. C. Clark, Stoughton, Wis.
934,505—Change Speed Gearing. C. Cotta, assignor to Cotta Transmission Co., Inc., Rockford, Ill.
934,793—Vehicle Wheel. J. A. Crandall, assignor of one-third to E. B. Schnebley, trustee, Brooklyn, and one-third to W. P. Hampshire, Aqueduct, N. Y.
734,716—Variable Speed and Reversing Gear. F. W. Dodd, Rodwell, Weymouth, England.
934,518—Tongue Hound. P. A. Gehring, assignor of one-third to J. C. Picker and one-third to L. F. Picker, Kenosha, Wis.
934,604—Variable Speed Transmission Clutch. D. George, Hardway, Gosport, England.
934,919—Apparatus for Making Seat Bodies for Automobiles. M. H. Kashian, Amesbury, Mass.
934,547—Braking Means for Automobiles. A. Krebs, assignor to La Societe Anonyme des Anciens Etablissements Panhard et Levassor, Paris, France.
934,821—Power Transmission and Direction changing Device. W. S. Lewis, assignor of one-fourth to W. W. T Berrill and one-fourth to F. Lahaye, San Francisco, Cal.
934,618—Sled Coupling. H. H. Mohr, Missoula, Mont.
934,752—Brake for Vehicles. A. P. Peabody, Camp Verde, Ariz.
934,566—Spoke for Vehicle Wheels. H. O. Peck, assignor to H. O. Peck Automobile Wheel Company, Portland, Ore.
934,461—Tire Tool. H. J. Phillips, Bayswater, London, England.
934,757—Fifth Wheel Construction. J. Repetto, Philadelphia, Pa.
934,762—Valve Gear for Descending Automobiles. H. Saurer, Arbon, Switzerland.
934,472—Tire. J. S. Stevenson, Detroit, Mich.
934,584—Radiator for Automobiles. F. Todd, asignor to J. B. Long, Chicago, Ill.
934,773—Vehicle Wheel. J. H. Van Arsdale, assignor of one-half to H. Luedinghaus, Jr., St. Louis, Mo.
934,639—Tire. V. E. Van Cantfort, Akron, O.
934,862—Removable Rim for Vehicle Wheels. G. S. Van Voorhis, Boston, Mass.

Copies of above patents may be obtained for fifteen cents each by addressing John A. Saul, solicitor of patents, Fendall Building, Washington, D. C.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE CARRIAGE INDUSTRY.

Patents Expired October 11, 1909.

484,052—Thill Coupling. Winthrop M. Sayre, South Orange, N. J.
484,259—Vehicle Running Gear. Edward Storm, Poughkeepsie, N. Y.
484,309—Equalizer for Buggy Springs. Chas. Glattly, Buck Creek, Ia.
484,371—Draft Equalizer. Theodore Keller, Trim Belle, Wis.

Patents Expired October 18, 1909.

484,414—Shifting Seat for Vehicles. Richard Fawcett, Salem, O.
484,552—Elastic Cushion for Hubs. John R. Gleeson, Chico, Cal.
484,566—Thill Coupling. Peter Broadbrooks, Batavia, N. Y.
484,687—Wagon Brake. Vardiman T. Sweeney, Springfield, Ky.

Patents Expired October 25, 1909.

485,003—Whiffletree Coupling. Bernard D. Druen, New Haven, Conn.
485,060—Wagon Brake Lever. Geo. P. Riester, Salem, Ind.
485,091—Vehicle. Chas. Comstock, Richmond, Va.

Patents Expired November 1, 1909.

485,194—Thill Coupling. Edwin F. Hopkins, Cleveland, O.
485,292—Wagon. Theodore B. Moses, Jr., Boston, Mass.
485,368—Thill Coupling. Christopher C. Bradley, Syracuse, N. Y.

The foregoing list of patents, trade marks and designs of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents, Washington, D. C., and St. Paul Building, New York City.

MAKE GOOD.

There always will be those who will make good just as there always will be winners. There's no hope for the old fellows who have got in the rut, but every young man ought to be impressed with the idea that he can if he will. Determination—the kind that never gets tired—does the work. Nothing is so much on the mind of the average business man as the question as to whether he is "making good." From the man highest up down to the man at the foot of the ladder, it is the same old grind. Keep plugging, or fall behind is the universal law.

Digitized by Google

Trade News From Near and Far

NEW FIRMS AND INCORPORATIONS.

At St. Joseph, Mo., the Avenue Carriage Works, capital $2,000, has been incorporated by P. E. Weller, E. Gebhart, O. C. Gebhart and others.

The Elmer Motor Car Co., of New York, has been incorporated for $20,000 to manufacture cars, carriages, etc., by Geo. W. Post, C. J. Post and others.

The Peter P. Rowan Co. has been incorporated in New Orleans, La., with a capital of $50,000, to deal in carriage and wagon material.

M. D. Skinner is promoting the establishment of a carriage factory in Velasco, Tex.

The Consolidated Wagon & Machine Co. is establishing a branch house at Brigham, Utah. L. E. Duffin has the work well in hand and will open the branch very soon.

The Meissner-Fangemann Company, to make motors, carriages, etc, capital $10,000, has been incorporated by Charles F. Meissner, John G. Fangemann and others of Brooklyn, N. Y.

The Riverview Bronze & Mfg. Co., capital $50,000, has been incorporated by P. F. Woods and others of Buffalo, N. Y. Carriages, wagons, etc., will be manufactured.

At Trenton, N. J., the Messrs. P. F. and T. P. Petry have incorporated the Peter Petry & Sons Co., to make carriages, wagons, etc.; capital $125,000.

Cisler & Serson, Chicago, capital $6,000, to engage in general automobile and supply business, leather goods and harness, is a new company, the incorporators of which are Joseph Serson, Edwin J. Cisler, Conrad H. Kammerer.

A new Chicago company is the Scott Governor Spring Co., capital $25,000, manufacturing and dealing in automobile and vehicle accessories, etc. The incorporators are Geo. N. Scott, Franklin Harding and Arnott Stubblefield.

The McGregor Lumber Co., to make vehicle appliances, capital $5,000, has been incorporated by A. L. McGregor, B. J. Cook and others of Chicago.

Bloomvilla, O., is soon to have a new firm in the buggy and wagon business. Charles Stewart and C. G. Cook, of Fostoria, have leased the J. Miller buggy and wagon works and expect to take possession soon.

John Storey & Son have engaged in the vehicle and implement business in Foster, Neb.

The Moffatt Lumber & Hardware Co., Moffat, Colo., has put in a stock of wagons.

A new Ravenna (Neb.) firm in the vehicle-implement field is Herbert Bros.

Archie Munro has opened a new stock of vehicles and implements in West Chester, Ia.

Robert Elliott has engaged in the hardware and buggy business in Millboro, S. D.

W. A. Neff is engaging in the vehicle and implement business in Stafford, Kan.

A. C. Ryan has engaged in the vehicle and hardware business at Toledo, Ia., and P. J. Ryan will manage the same.

James Sutton has engaged in the carriage and implement business in Harper, Kan.

At Echo, N. Y., the Only Car Company, capital $300,000, has been incorporated by R. E. Lober, of Port Jefferson, N. Y., and others. The company will make automobiles.

The National Mfg. Co., capital $15,000, has been incorporated by members of the wagon building firm of Broten & Dyerson, of Dodgeville, Wis. The corporation will manufacture wagons.

The C. E. Wooten Company obtained a charter at Dover, Del., to purchase and sell carriages, wagons and implements, fertilizers and phosphates. The incorporators are Charles E. Wooten, John W. King, William H. Cook, Thomas W. Records and William W. Cooper, Jr., all of Laurel. The capital stock is $20,000.

BUSINESS CHANGES.

C. H. Little, Barnesville, O., has moved his stock of buggies into new quarters.

Neville & Johnson have succeeded to the vehicle and implement business of Neville & Pringle in Burlington, Ia.

A. C. Little has purchased the stock of vehicles, etc., of Henry Lague in Concordia, Kan.

Joseph Buser has purchased the stock of vehicles, etc., L. G. Pierce & Co. in Grinnell, Ia.

Johnson & Johnson have bought the vehicle and implement business of J. A. Steinnel at Marcus, Ia.

Frank Dobney has sold out his vehicle and implement business in Stuart, Neb., to W. N. Coats.

N. D. Ricker has succeeded to the vehicle and implement business of Ricker & Landis in Eureka, Kan.

Adam Lankard has purchased the vehicle and implement business of Pattie & Turrell in Harris, Kan.

H. J. Klein has sold out his stock of vehicles and hardware in Kingman, Kan., to J. H. Clare.

N. P. Gregory has purchased a half interest in the vehicle and hardware business of E. W. Wilder in Gallatin, Mo.

E. M. Yates has disposed of his stock of vehicles, etc., in Norman, Okla., to W. L. Garland, of Lubbock, Tex.

Mains & Co. have sold out their stock of vehicles and implements in Setwart, Ia., to Geo. C. Buckley & Co.

Contracts have been signed by which the M. K. & T. Railroad has obtained an option to purchase the realty occupied by the Gostring Wagon Company in North St. Louis.

Since the recent retirement of Otto Schwalbe from the White Wagon Works at Sheboygan, Wis., Chas. F. Heald has become a stockholder and has been elected secretary of the company. The other officers are A. O. Heald, president, and O. C. Trowbridge, vice-president and treasurer.

M. L. Farmer, Memphis, Tenn., has contracted to have his business block remodeled and will put in a large stock of buggies.

The business men of Rogers, Ark., are subscribing liberally to a large fund for the establishment of an extensive wagon factory at that place. In addition to the cash bonus a site consisting of about 50 lots is to be donated to the company.

Philip H. Tilton has sold out his wagon painting business in Jersey City on account of ill health and will go South to recuperate.

T. J. Coffman Co. has succeeded Howard-Coffman Co., vehicles, at Spokane, Wash.

Practically the entire stock of the Burg Wagon Company, Burlington, Ia., a corporation capitalized at $75,000, has been bought by W. G. Mercer. Mrs. John Burg, widow of the founder of the plant, retains a few shares of the stock for sentimental reasons. The plant comprises seven buildings and the company has been in existence for 57 years. W. G. Mercer, the new owner, has taken possession. It is his intention to increase the capacity and output.

IMPROVEMENTS—EXTENSIONS.

A six-story brick factory will be built by J. F. Galvin on the west side of the Boulevard, Long Island City. It is estimated to cost $140,000. The building is to be devoted to the manu-

Digitized by Google

facture of carriage and automobile trimmings, tops, cushions, lamps, etc.

At Joplin, Mo., there is to be erected a two-story brick sales house by the Reynolds Carriage Company. The cost of the structure is to be $4,000 and it will adjoin the plant of the Reynolds Carriage Company.

The Cleveland (Tenn.) Buggy Works will move soon into new quarters. C. R. Woolen, the proprietor, is erecting a new building.

It is understood that a large factory plant is contemplated by the Bode Wagon Company at Cincinnati, O. The building will probably me three stories in height, to cost about $15,000.

Brown Bros., the veteran carriage manufacturers of Bristol, Tenn., who also manufacture a general line of serviceable vehicles, are taking steps to erect a modern concrete stone building.

The Warden Carriage Company, of Cleveland, O., will erect a new building in Carnegie Avenue near E. 65th Street. The plans have already been prepared.

The increasing business of the Watson Wagon Company, of Canastota, N. Y., has demanded that they have more room. Recently they purchased a large lot and storehouse.

The Anderson (Ind.) Carriage Manufacturing Company held its annual opening during the week of October 19. Mr. Wheelock says this year is going to be a banner year, and is building an addition to the already large factory to prove his statement.

For the purpose of enlarging its business the Herns Mail Wagon Company, of Battle Creek, Mich., purchased for a considerable sum of money the old factory site formerly occupied by the Bourdeau Food Company. The company will, besides making mail wagons, manufacture wagons, drays and carriages.

BUSINESS TROUBLES.

John M. Hall, receiver for the National Wheel Company, of Indianapolis, Ind., has filed a report with the Probate Court, showing the sale of the plant to Carl D. Fisher for $9,532.75.

The receiver's sale of the Kauffman Buggy Company, of Miamisburg, O., had to be postponed owing to the fact that not one bid was received on the property.

No definite plans have been outlined in connection with the stockholders and creditors of the Ionia Wagon Co. T. P. Waites has made a proposition to the creditors to take the matter out of the hands of the receiver, and all but three agreed to it, leaving the matter undecided for a time.

J. C. Cadwallader, assignee of the Norwood Carriage Company, Cincinnati, has filed his account in the Insolvency Court. The account shows receipts amounting to $1,507.34 and expenditures of $779.20, leaving a balance of $728.14.

W. H. Lasater, a carriage and wagon maker of Asheville, N. C., filed a petition in bankruptcy and was adjudged a bankrupt. The total liabilities were given at $42,781.66; assets, including $1,500 claimed as exemption, were put in at $37,366.92.

The Coquillard Wagon Works, of Henderson, Ky., through its president, James E. Rankin, has filed a deed of assignment. The papers name the Ohio Valley Banking & Trust Company and James E. Rankin as assignees. The plant was removed to Henderson from South Bend, Ind., in September, 1902. It was incorporated with a capital stock of $100,000. October 1, 1903, the capital stock was increased to $200,000. The stockholders are James E. Rankin, James R. Barrett, John H. Barrett estate, R. H. Soaper, P. J. Marrs, H. P. Barrett, Edwin Hodge, O. W. Rash, D and F. Mann, S. S. Perley, South Bend; C. P. Schlamp, C. F. Nosworthy, Thomas Cummings, Isaac Mann estate and Norris & Lockett.

FIRES.

The carriage and implement house of Ledbetter & Lent, in Ninnekah, Okla., has been destroyed by fire.

The stock of vehicles of Slocum & Gore, in Fair Oaks, Cal., has been destroyed by fire.

The Plymouth Cordage Company, of North Plymouth, Mass.; the Sechler Carriage Company, of Moline, Ill., and the Smith Manufacturing Company, of Chicago, suffered loss by fire on goods stored in the Rhodes Implement Co.'s warehouse at Kansas City on October 12.

Fire at Winchester, Ky., destroyed the carriage shop of Mat Bean. Loss, $7,000.

Fire, originating from an unknown cause, in the carriage and wagon works of C. E. Wright & Company at Norfolk, Va., caused damage which will amount to perhaps several hundred dollars and which is partially covered by insurance.

The L. E. Coolidge Carriage Co.'s plant at Woodville, Mass., was destroyed by fire November 5. Loss, $15,000.

Fire destroyed the second story of a building at Fort Dodge, Ia., used by the Fort Dodge Wagon & Carriage Works. Loss, $2,000.

The carriage shop of Geo. Barney at Sandy Hill, N. Y., was destroyed by fire, entailing a loss of $2,500.

The Priebe Carriage Co. ware room at St. Joe, Mo., was damaged $200 by fire.

The plant of Arthur Rehberger & Sons, wagon manufacturers at Newark, N. J., was destroyed by fire October 15.

HIGH PRICES FOR SECOND-HAND HIGH-GRADE VEHICLES.

Slightly used carriages of the highest grade, built by Brewster, Healey and other fashionable coachmakers, are becoming hard to buy and high in price in the New York market. Values have advanced sharply in the last few months, and a first-class brougham or cabriolet now commands something like its old-time price. Van Tassell & Kearney sold one second-hand brougham recently for $800 and another for $700, which would have seemed good prices before the panic or the automobiles came along.

Wants

Help and situation wanted advertisements, one cent a word: all other advertisements in this department, 5 cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

SITUATIONS WANTED.

Wanted—Position by a trimmer as foreman, or work by contract. Have been ten years with present employer as foreman. Address "L. W.," care The Hub, 24 Murray Street, New York, N. Y.

Wanted—Position by trimmer, foreman or contractor. Can make good. Reference. Address "M. 62," care The Hub, 24 Murray Street, New York, N. Y.

HELP WANTED.

Wanted—Salesmen to sell buggies and automobiles in Kansas, Iowa, Illinois and South Dakota. Address "L. B. C., care The Hub, 24 Murray Street, New York, N. Y.

Wanted—Three more body makers on broughams. Riddle Coach & Hearse Co., Ravenna, Ohio.

BUSINESS OPPORTUNITY.

Business Opportunity—Open for live, up-to-date carriage man with $10,000 to $15,000 to invest in stock of thrifty carriage concern in the West, earning 20 per cent annually. Business increased 40 per cent in past year. Sales, $500,000. A good salaried position also to experienced man. Reason for selling ill health. Address "F. E. G.," care The Hub, 24 Murray Street, New York, N. Y.

PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 608 F St., Washington, D. C. Established 1883. I make an investigation and report if a patent can be secured and the exact cost. Send for full information. Trade-marks registered.

Digitized by Google

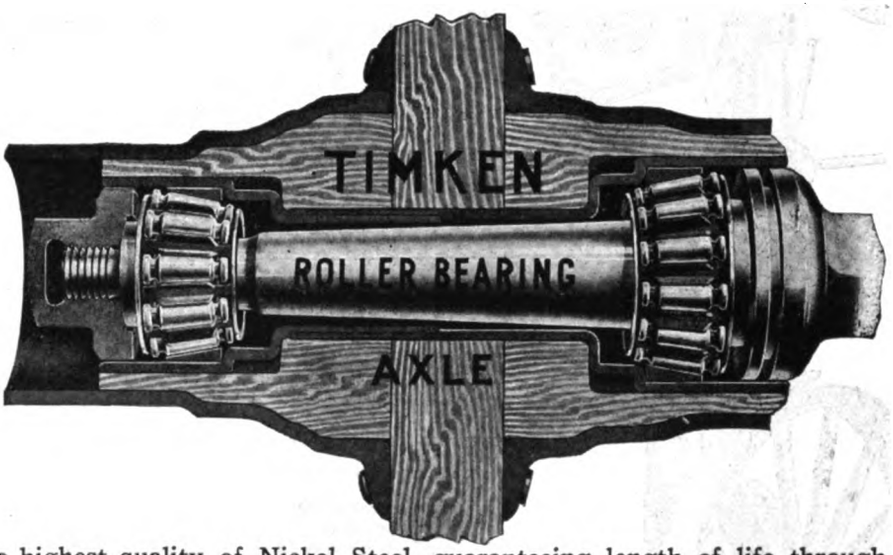
THE MAJORIY of BUILDERS and DEALERS

who have used
Timken Roller
Bearing Axles

in the past believe they could not be improved upon, yet those who have seen and used the new design declare the improvements added make for increased efficiency and value to the customer.

THE BOX is of pressed steel—Cups of hardened steel inserted—insuring at all times a perfect bearing surface.

THE CASE, made on similar lines, insures perfect alignment, dispensing with the small nibs on the end of the rollers, reducing breakage under the severest strain to a minimum.



THE ROLLERS are made of the highest quality of Nickel Steel, guaranteeing length of life through greater wearing qualities.

TIMKEN ROLLER-BEARING AXLES on a vehicle mean not only greater profit to the manufacturer and dealer, but insure for them satisfied customers.

THE TIMKEN ROLLER BEARING CO.

Branches
10 E. 31st Street, New York
429 Wabash Avenue, Chicago, Ill

Canton, Ohio.

OUR LINE

OF

LIMOUSINE
LANDAULETTE
TAXICAB
HARDWARE
TRIMMINGS
FITTINGS

IS EXCEPTIONALLY COMPLETE
PROMPT DELIVERY

The English & Mersick Co.
New Haven, Conn.

Brazil Leather

FOR AUTO BUGGY TOPS

SEAT AND BACK SPRINGS,
COTTON, NAILS, WADDING,
MOSS, TACKS, WASHERS,
HAIR, BUTTONS, REEDS,
REED MOULDING,
CLINCH BUTTONS

G. H. Lounsbery & Sons
Cincinnati, Ohio

The Tires for Satisfaction

Goodyear Wing Carriage Tires and Goodyear Eccentric Cavity Cushion Tires with canvas guides are tires that wear—that give satisfaction and increase the dealer's trade. For all

GOODYEAR

tires are made of new, pure rubber, not of reclaimed "rubber" from the junk heap, nor any low grade. They sell easily because they save the user money—which pleases him—and he tells his friends.

Write today for free booklet showing how Goodyear Carriage Tires are built. Ask for sample section.

THE GOODYEAR TIRE & RUBBER CO., Canal Street, Akron, Ohio

Boston	Philadelphia	Cleveland	Buffalo	Denver
Los Angeles	New York	Chicago	Detroit	St. Louis
Cincinnati	San Francisco	Pittsburg	Atlanta	Washington

Please mention "The Hub" when you write.

Digitized by Google

A New
Tire
Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

Bolt Clippers
Everett, Mass., U.S.A.

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

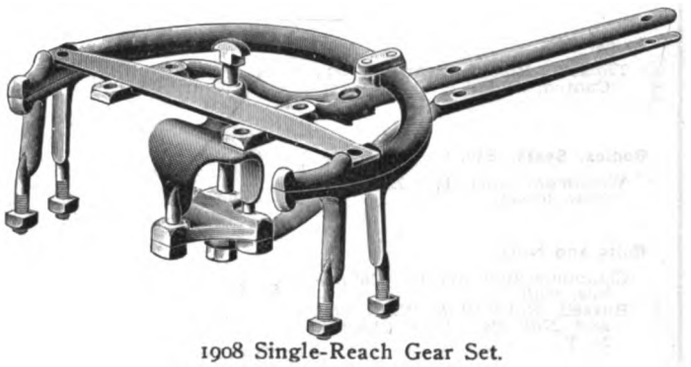
Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.
745 THIRD AVE., BROOKLYN, N. Y.

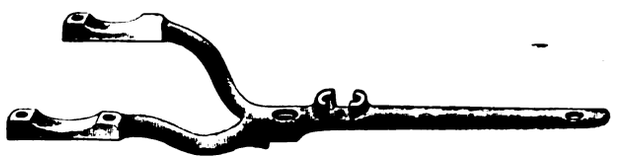
INDEX TO ADVERTISEMENTS.

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.



Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

Our Carriage or Spring Edge Cushion Frame

Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

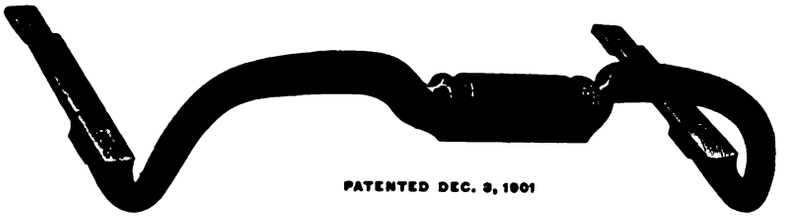
NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



PATENTED DEC. 3, 1901

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland. Pa

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Please mention "The Hub" when you write.

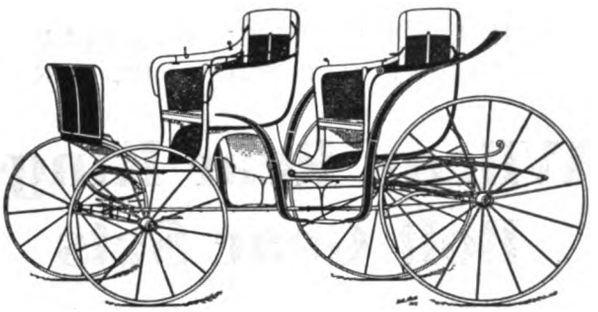
Digitized by Google

Vehicles in the White

WITH TRIMMINGS OR WITHOUT
THAT'S THE WAY WE MAKE THEM

GREATEST VARIETY OF STYLES ON THE MARKET.

AUTOMOBILE BODIES A SPECIALTY



OUR LINE OF GEARS WILL INTEREST YOU.
MORE THAN FIFTY DIFFERENT STYLES.

WRITE FOR OUR CATALOGUE.

Schubert Bros Gear Co.
ONEIDA, N. Y.

A GREAT PROBLEM!

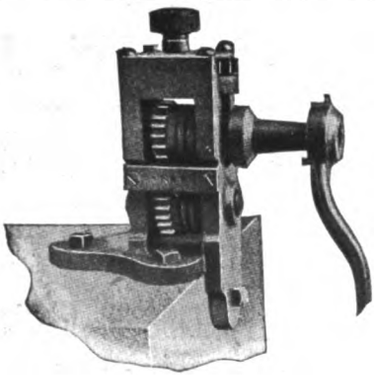
The old system of pulling out old rusty wires and inserting new ones in old rubber tires is behind the times. We know you know it.

YOU WANT A PROGRESSIVE TWENTIETH CENTURY METHOD.

WE OFFER YOU

The CLIMAX RUBBER TIRE WIRING MACHINE

IT DOES THE WORK—NOT YOU.



The old system is a thing of the past. Look at this machine. Note its powerful action and you will understand why we guarantee it to do what we claim for it—Pull out old wires, put in new. No trouble, no lost time. A money saver. A trade maker. Try it. Write to-day.

SPENCER MANUFACTURING CO.
SPENCER WEST VIRGINIA.

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.
Timken Roller Bearing Co., Canton, Ohio.

Bodies, Seats, Etc.
Woodman, Joel H., Hoboken, New Jersey.

Bolts and Nuts.
Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.
Wiese & Co., Wm., New York City.

Carriage Forgings.
Cortland Forging Co., Cortland, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.
Gifford & Son, John A., New York.

Carriage Goods.
Cortland Forging Co., Cortland, N. Y.
English & Mersick Co., New Haven, Conn.
Gifford & Son, John A., New York.
Herbrand Co., The, Fremont, O.

Dashes, Fenders, Rails, Etc.
McKinnon Dash Co., Buffalo, N. Y.

Fifth Wheels.
American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Jacks.
Hankinson, J. V., Franklin, O.

Lamps.
Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Machinery and Tools.
Barnes Co., W. F. & John, Rockford, Ill.
Porter, H. K., Everett, Mass.

Miscellaneous.
Standard Oil Cloth Co., New York.

Props and Bow Sockets.
Crandall, Stone & Co., Binghamton, N. Y.

Rubber Tires.
Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Swinehart Climber Tire & Rubber Co., Akron, O.

Shaft Couplings and Anti-Rattlers.
Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Metal Stamping Co., New York City.
Spencer Mfg. Co., Spencer, W. Va.

Springs and Gears.
Fitch Gear Co., Rome, N. Y.
National Spring and Wire Co., Albion, Mich.
Spring Perch Co., Bridgeport, Conn.

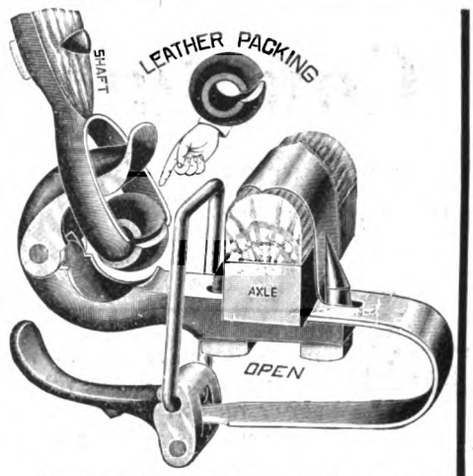
Trimming Materials.
Stevens & Sackett Co., New Haven, Conn.

Varnishes, Paints and Japans.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Masury & Son, John W., New York and Chicago.
Louderbach, A. E., New York.
Manders Bros., Wolverhampton, England.
Moller & Schumann, Brooklyn, N. Y.
Pierce Co., F. O., New York.
Smith & Co., Edw., New York.
Standard Varnish Works, New York City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

Wheels.
Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.
Union City Wheel Co., Union City, Ind.

Wheel Stock, Bent Wood, Etc.
Crane & MacMahon, New York.
Tucker Wood Work Co., Sidney, O.

Digitized by Google



Placing the loop over the end of the cap and drawing the thumb lever back until it rests against the flat spring closes the coupler, keeps it closed, and takes up the wear of the leather packing.

Unless a Carriage Coupler is furnished with a moulded leather bushing and steel spring JUST LIKE THIS it is NOT a BRADLEY.

THE BRADLEY Carriage Coupler

All steel, Noiseless, Quick Shifting, Ball Bearing.

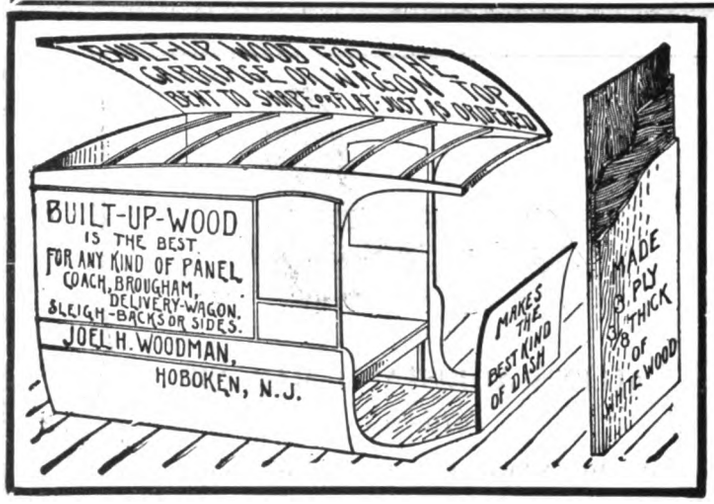
The ONLY Carriage Shaft Coupler that is furnished with a

One-Piece Moulded Leather Packing

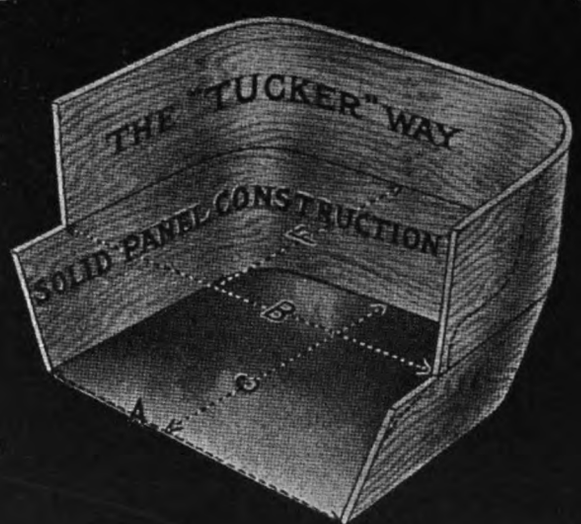
A packing that will outwear any other packing ever made. It fits the ball and socket. It is held in place by a spring steel retaining ring. It may be put on and taken off in a jiffy, and it stays where it is put.

C. C. BRADLEY & SON

SYRACUSE, NEW YORK.



SOLID BENDINGS



MAKE FAULTLESS SEATS

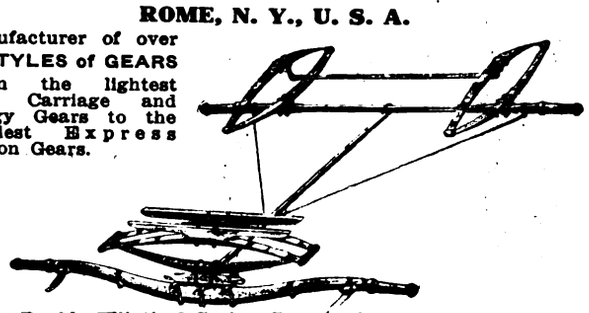
CATALOG "H" SHOWS SIZES
WRITE FOR IT
THE TUCKER WOODWORK CO. SIDNEY, OHIO.

FITCH GEAR COMPANY

ROME, N. Y., U. S. A.

Manufacturer of over 40 STYLES of GEARS

From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.



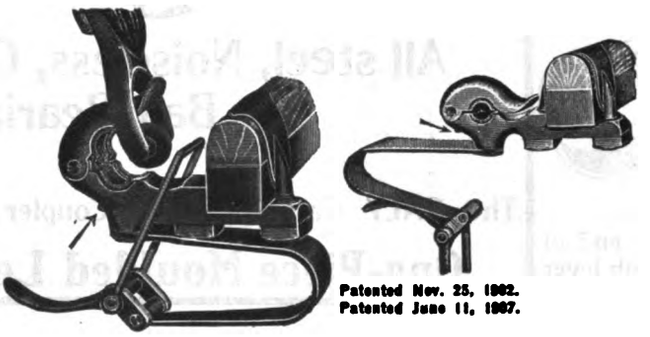
The Double Elliptic 3-Spring Gear is the most practical combination business and pleasure gear on the market, and is equipped with Wrought or our Common Sense Short Turn Fifth Wheel. Send for our No. 24 Catalogue.

Digitized by Google

Eccles Ball Bearing Couplings

ALL OUR COUPLINGS ARE SHIPPED OUT WITH TWO PIECE BUSHINGS, FASTENED IN THE COUPLINGS

WHEN BUSHINGS ARE WORN OUT BY LONG USE, THEY CAN BE INSTANTLY REPLACED AND FASTENED INTO THE SOCKET BY OUR SPECIAL PROCESS



Patented Nov. 25, 1902.
Patented June 11, 1907.

THE SPRING IS PIVOTED AT THE FRONT SO THAT IT CAN BE TURNED OUT OF THE WAY OF THE WRENCH WHILE CLIPPING COUPLING TO THE AXLE.

No Lost Bushings when you Use Our Couplings

We Make a Full Line of Carriage and Wagon Forgings

RICHARD ECCLES COMPANY

Catalogue No. 15 is our latest

AUBURN, NEW YORK

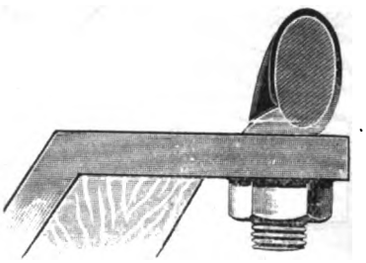
Cold weather **can't** knock the life out of **MERITAS.**

It's the one enameled oil cloth that **won't** freeze up and get brittle.

Built with **real oils** that make **MERITAS** the **most durable** oil cloth you can use for carriage tops and storm curtains.

SEE YOUR JOBBER.

Standard Oil Cloth Co.
320 Broadway **New York**

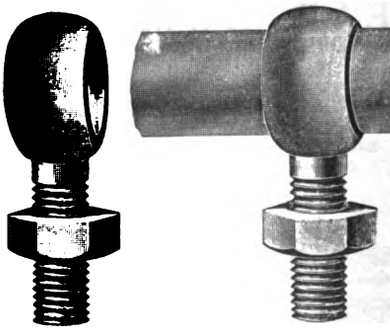


ALLEN'S ADJUSTABLE RAIL NIB

PATENTED

Readily Adjusted **Absolutely Secure**

For 9-16 x 3-8 Oval, 5-8 x 3-8 Oval, 3-4 x 3-8 Oval



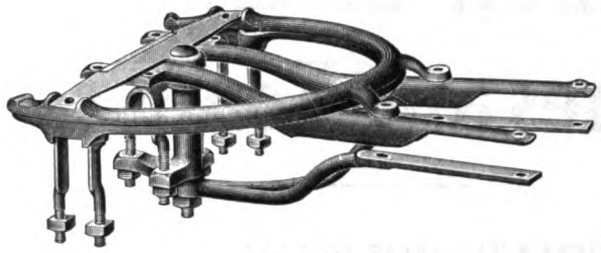
Ajax Adjustable Rail Nibs

Slides on the Oval and Conforms to variation in Seat Irons.

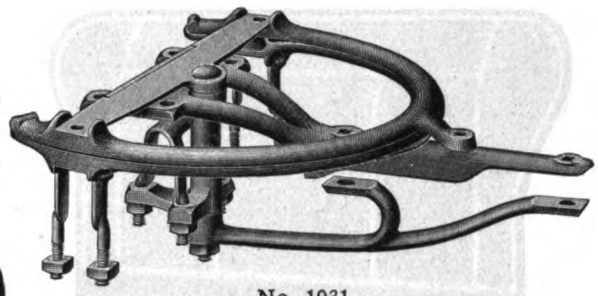
For 9-16 x 3-8 Oval, 5-8 x 3-8 Oval, 3-4 x 3-8 Oval.

CORTLAND FORGING COMPANY
CORTLAND, N. Y.

Digitized by Google

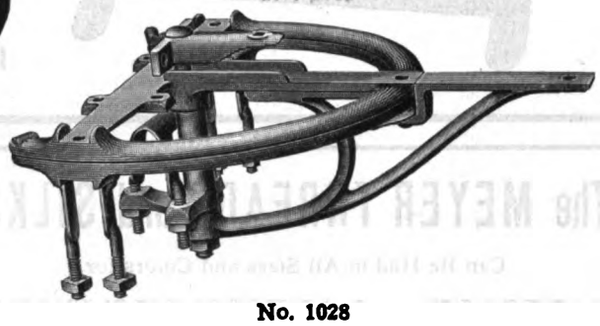


No. 1030



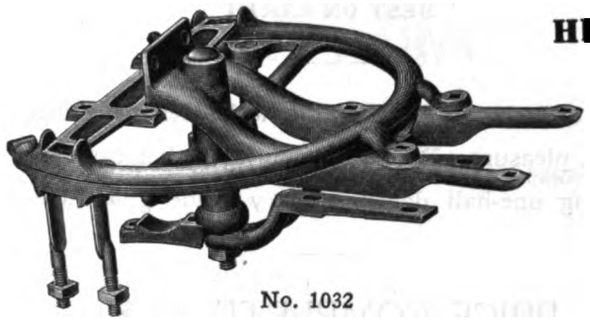
No. 1031

No. 1054



No. 1028

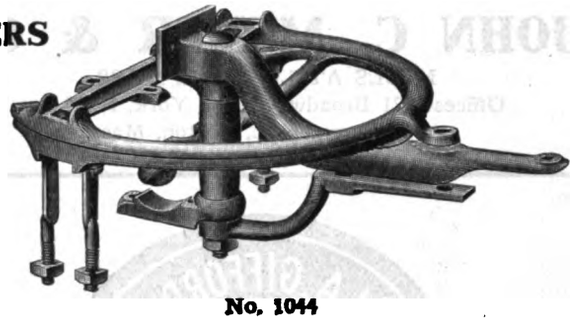
THE EBERHARD MANUFACTURING CO., Cleveland O.



No. 1032

HEADQUARTERS

FOR



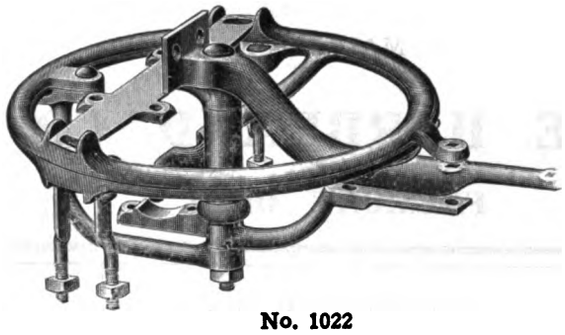
No. 1044

FIFTH WHEELS

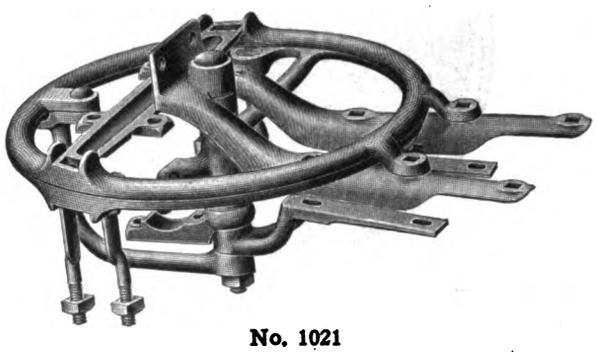
AND

ALL KINDS

OF

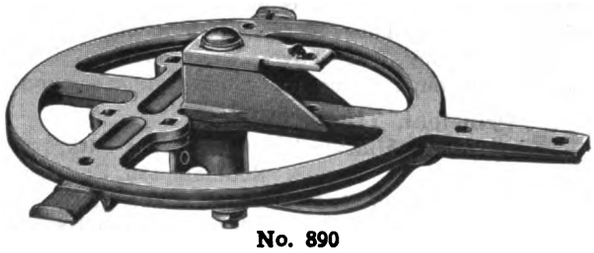


No. 1022

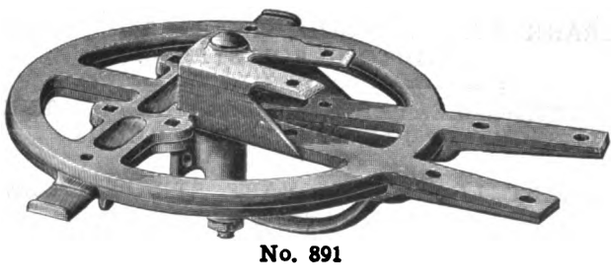


No. 1021

Malleable Iron, Carriage and Wagon Hardware

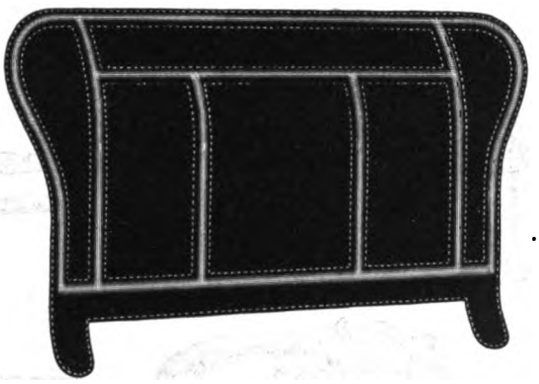


No. 890



No. 891

Digitized by Google



HIGH GRADE

Dashes and Fenders

THE INDIANAPOLIS DASH CO.

INDIANAPOLIS INDIANA

The MEYER THREADS and SILKS

Can Be Had in All Sizes and Colors for

CARRIAGE and AUTOMOBILE WORK

Also Tufting Twine and Seaming Cord.

WILL NOT ROT OR FADE LIKE INFERIOR MAKES

JOHN C. MEYER & CO.

MILLS AT LOWELL, MASS.
Offices: 621 Broadway, New York, N. Y.
77 Summer St., Boston, Mass.

Do You Shave Yourself?

If Not Begin Now By Using

Herbrand Safety Razor

BEST ON EARTH

The Herbrand Hollow Ground Blades make shaving a pleasure. Blades put up in leather case containing one-half dozen. Every blade guaranteed.

PRICE COMPLETE $2.50

MADE BY

THE HERBRAND CO.

FREMONT OHIO.

JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

The George R. Carter Co.

Manufacturers of

AUTO STRAPS A SPECIALTY

CRANK STRAPS, HOOD STRAPS, TOP STRAPS AND TOOL BOX STRAPS.

JOBBERS IN

TRIMMING LEATHER, TOP LEATHER, LEATHER CUT TO PATTERN FOR CUSHIONS OR TOPS,
SHAFT LEATHERS, SHAFT STRAPS, POLE STRAPS, ETC.

CONNERSVILLE, INDIANA.

ESTABLISHED 1886.

Correspondence School of Carriage and Motor Carriage Drafting

A thorough, practical tuition is given through this correspondence school. The theory and practice of construction, bookkeeping, perspective. Many men now hold good positions through taking the courses of instruction.

Principal, THOS. MATTISON,
Hillside Avenue, Bitterne Park,
Southampton, England.

Author of "The Coach Body Makers' Guide," $3.00; a practical treatise on "The Suspension of Carriages," "Bookkeeping," and other carriage building works.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

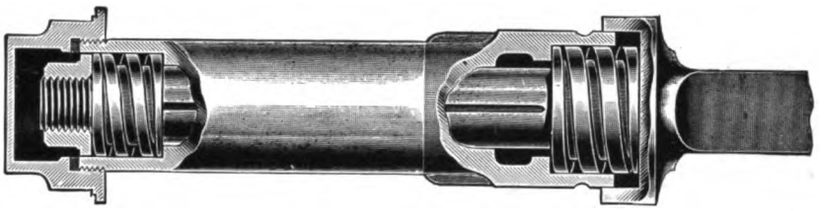
F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

C. T. RAYNOLDS & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

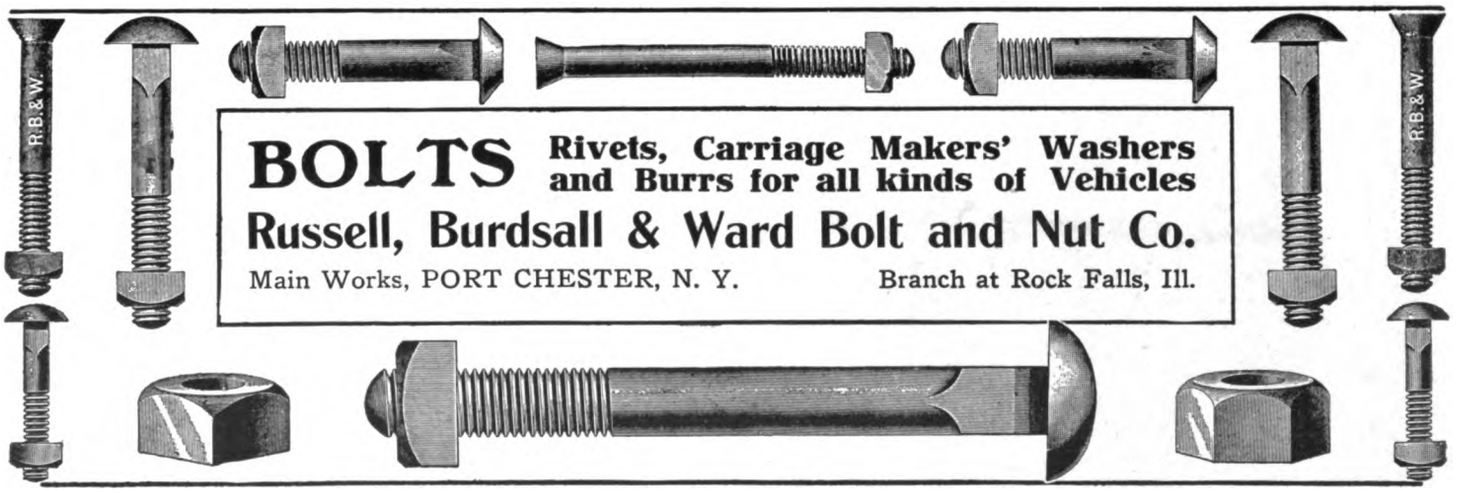
PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

DALZELL AXLE CO., South Egremont, Mass.

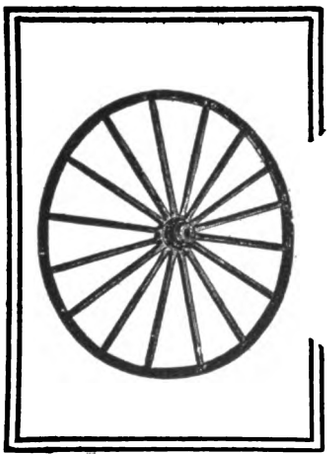


BOLTS

Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.



Time Has Told the Story!

Service and satisfaction always follow our rolling stock

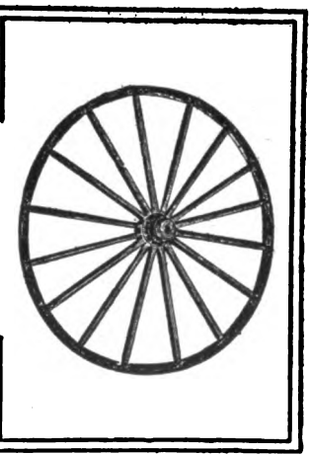
WHEELS

ALL KINDS—BEST QUALITY

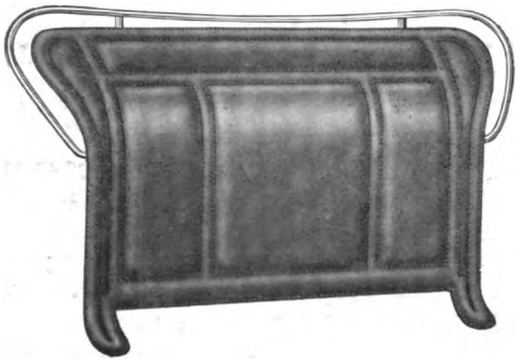
Also RIMS and SPOKES

The Eberly & Orris Mfg. Co.

MECHANICSBURG, PA.



Digitized by Google



No. 334 N. With Nickel Rail.

WING DASHES

WITH RAIL WELDED SOLID

WILL DRAW TRADE

McKINNON DASH COMPANY

Cincinnati, Ohio. Troy, Ohio. **BUFFALO, N. Y.** St. Catharines, Ontario.

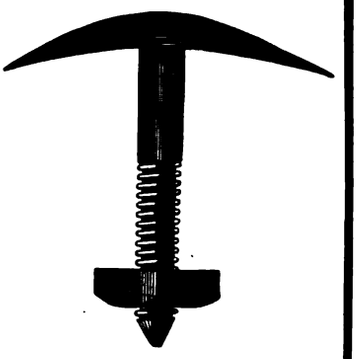
Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips ⅝ or ¾ width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

Catalogue "H" and Prices on Application.

COLUMBUS BOLT WORKS, Columbus, O.



HIGH-GRADE VEHICLE

WHEELS

SARVEN, WARNER COMPRESSED BAND WOOD HUB

All materials are carefully selected and thoroughly seasoned. Prompt Shipments. Send for Catalogue and Price List.

UNION CITY WHEEL COMPANY,

Union City, Indiana

Digitized by Google

The Hub

SOME carriage builders are predicting a 30 per cent increase in carriage building for 1910 over the year of 1909. They figure that the increase of 1909 over 1908 being 20 per cent, then 1910 will show an increase of at least 30 per cent over 1908, which was a year of depression. This year the crops show some $800,000,000 over last, and a margin of only 2 per cent of this surplus wealth would mean an addition of about $16,000,000 to the $125,000,000 of carriage values which would be represented by 320,000 $50 buggies.

Oldest Carriage Journal in the World

1858 1909

Vol. LI. No. 9 DECEMBER, 1909

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

RIGHT VARNISH MAKES

Satisfactory Vehicles

CARRIAGES. buggies and other vehicles that satisfy must not only be well made, they must also be **well varnished.** Your reputation and your profits depend upon the varnish you use. You can make no mistake by using STANDARD VARNISH WORKS' VARNISHES, they are the standard of excellence because they represent a **Unity of Color, Lustre, Working, Drying and Wearing Properties.** Of those not using these varnishes we ask for an opportunity to prove the validity of our claims.

STANDARD VARNISH WORKS

CHICAGO NEW YORK LONDON BERLIN BRUSSELS

INTERNATIONAL VARNISH COMPANY, Ltd., TORONTO, CANADA

CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

ESTABLISHED IN 1791

Wm. Harland & Son

Beg to announce that they have removed their United States Headquarters to Genesee Street and Erie Canal, Buffalo, N. Y.

Wm. Harland & Son

IMPORTERS OF

Harland's English Varnishes

FOR

Coach and Automobile Builders, Railway and Street Car Finishing

AND MANUFACTURERS OF

High Grade Varnishes for all Purposes

FACTORIES:

MERTON, LONDON, S. W., ENGLAND.

GENESEE STREET and ERIE CANAL, BUFFALO, N. Y.

400 EASTERN AVENUE, TORONTO, ONTARIO.

Western Branch, 40 Dearborn Street, Chicago. C. H. Schooley, Manager.

General Manager United States and Canada, H. Hagger.

Please mention "The Hub" when you write.

Digitized by Google

JOHN W. MASURY & SON.

ORIGINATORS OF

Superfine Coach and Automobile Colors

AND MANUFACTURERS OF

Fine Carriage and Automobile Varnishes

New York, Chicago, Minneapolis, Kansas City

—WILLEY'S—

COLORS

The RECOGNIZED STANDARD

C. A. WILLEY CO.

COLORS GRINDERS

and Manufacturers of Specialties in

CARRIAGE, AUTOMOBILE AND CAR

PAINTS

COLORS, VARNISHES, ETC.

HUNTER'S POINT, NEW YORK CITY

LAMPS

We have some open time for a few new lamp contracts —IF you want a high-grade lamp at a moderate price.

Lamps for any fine closed vehicle.

The English & Mersick Co.

New Haven, Conn,

Digitized by Google

1910 IMPROVEMENTS IN SWINEHART TIRES

MEAN MORE MILEAGE, LESS EXPENSE, NO DELAYS, DOLLARS SAVED

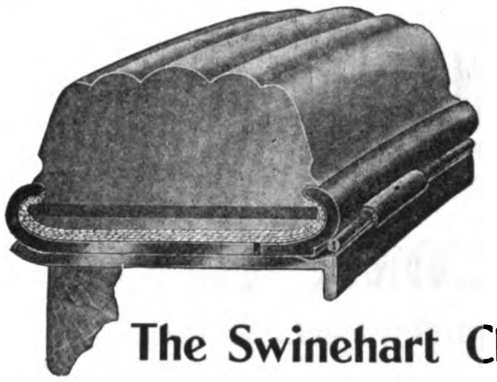
CONSIDER! Mr. Manufacturer, the advantages of our line before leaping into the uncertainty of 1910 season with an old-fashioned, inefficient, unimproved, inconvenient tire equipment.

CONSIDER! Mr. Manufacturer, that truck owners in general are no longer buying tires because they are cheap.

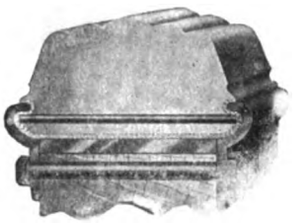
CONSIDER! Mr. Manufacturer, that more Swinehart tires are used in New York and Chicago (the great commercial car fields) than any other make, because they give from 20 per cent to 50 per cent more service, and are more convenient to apply.

CONSIDER! Mr. Manufacturer, every time your customers are forced to lay up their cars for repairs to tires or renewals, it costs them from $10 to $50 per day, and consider that Swinehart quick detachable rims eliminate all such delays.

SAVE YOUR CUSTOMERS MONEY AND IMPROVE THE REPUTATION OF YOUR CAR BY USING SWINEHART TIRES



FLANGE RIM FOR WOOD WHEELS



The success of our quick detachable rims during past seasons has demonstrated that truck owners appreciate this feature.

Our clincher tires with improved quick detachable flange rims make it possible for an amateur to change tires in thirty minutes. The nuts on one side are simply taken off, one flange removed, old tire slipped off, new one put on and flange replaced. No tools other than wrench and a few bars required.

QUICK DETACHABLE RIM FOR STEEL WHEELS

The rim shown at left has revolutionized the truck tire business and demoralized competitors. It has placed the truck tire manufacture on the same high plane of perfection as tires for pleasure cars. This rim is furnished for all steel wheels.

Not only have our tires and rims been improved constantly, but facilities improved and capacity enlarged in order to meet the constantly increasing demand for our product.

MOTOR BUGGY SPECIAL

Expressly designed for motor-driven cars—not a tire for horse-drawn vehicles. Wide tread gives increased traction. Large size, beaded tread and concave sides add resiliency and durability. Made endless, no joints, easily applied by anyone.

The Swinehart Clincher Tire and Rubber Company.

Akron, Ohio

NEW YORK, 875 7TH AVENUE — CHICAGO, 1720 MICHIGAN AVENUE

DETROIT, 850 Woodward Avenue — ST. LOUIS, 2109 N. 9th — SAN FRANCISCO, 503 Van Ness Avenue — INDIANAPOLIS, IND., 809 Mass. Avenue

DURABLE **RELIABLE**

Mander's English Varnishes

MANDER BRO'S, Wolverhampton, Eng.

Works Established 1803

A. E. LOUDERBACK

Agent

118 Hudson St. New York.

CARPENTER-MORTON COMPANY

Sole Agents for New England

BOSTON MASSACHUSETTS

BRILLIANT **ECONOMICAL**

Digitized by Google

VALENTINE'S VARNISHES

We have told you about them. Have you specified them on your varnish order?

TRADE VALENTINES VARNISH MARK

VALENTINE & COMPANY

New York Chicago Boston Toronto London Paris Amsterdam

82 Years' Experience in Every Can

E.S. 1827 & CO. **Edward Smith & Co.**

CARRIAGE VARNISHES

Everything from the
Bare Wood to the Finishing Coat.

CHICAGO **NEW YORK**

HOTEL EARLINGTON

55 WEST 27TH STREET
Near Broadway, NEW YORK

This well known, absolutely fireproof hotel, after being entirely renovated, redecorated and fitted up complete with new plumbing has now reopened.

Rates from $1.00 and Up
With Bath, $5.00 and Up

Special rates by the season or year for permanent guests. A special feature will be the cuisine, both in the dining room and in the new cafe for ladies and gentlemen. A la Carte and Table d'Hote.

Hotel under the management of

GUERNSEY E. WEBB
Formerly of the Ansonia.

RUB —— RUB —— RUB

THAT'S THE EXPERIENCE SOME PAINTERS HAVE WITH A POOR RUBBING VARNISH. THEY RUB TILL THEIR HEART ACHES ONLY TO HAVE THE VARNISH SWEAT, OR ROLL UP UNDER THE PAD.

XX Diamond Rubbing and Hard and Quick Drying Rubbing "A"

DRY HARD TO RUB IN TWO DAYS, WITHOUT SWEATING, ARE TOUGH AND THE BEST FOUNDATION FOR FINISHING COATS.

MADE BY **MOLLER & SCHUMANN CO.**

MARCY AND FLUSHING AVES., **BROOKLYN, N. Y.**

Digitized by Google

Goodrich
Solid Rubber Tires

Internal Wire Carriage Tires

Side-Wire Tires for Heavy Carriages

These products represent fifteen years of consistent development, and co-operation with customers. They have been distinguished always by the

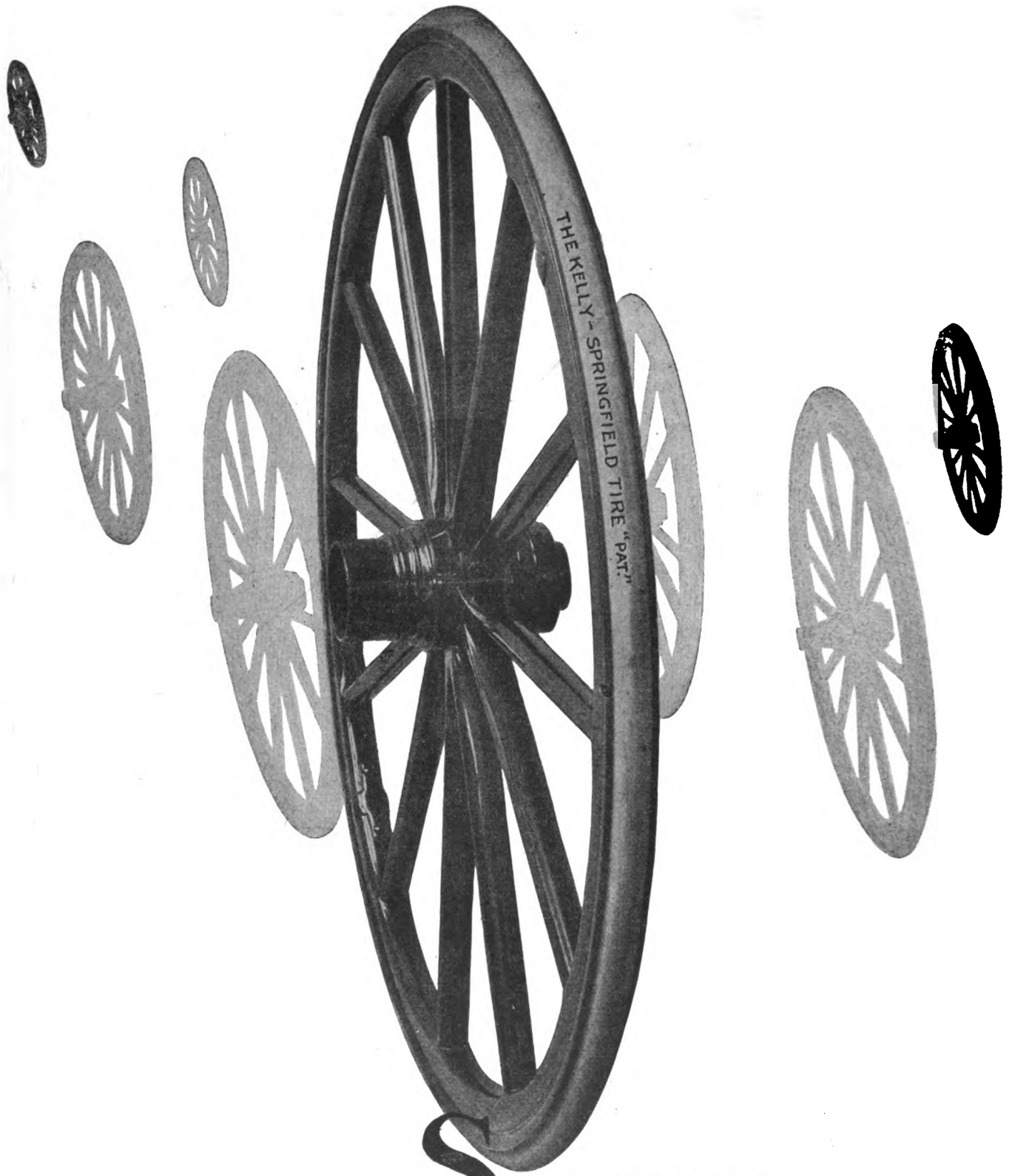
Mark of Quality

TRADE MARK

Copies of the 1910 Catalogue will be gladly sent on request.

The B. F. Goodrich Company
Akron, Ohio

Digitized by Google



SOMEBODY said that you never know how good a thing is until you see the imitation. WE say you never know how bad its imitations are until you see the

Kelly-Springfield Tire

Digitized by Google

The Hub

Copyright, 1909, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. LI. DECEMBER, 1909. No. 9.

THE TRADE NEWS PUBLISHING CO. OF N. Y.

Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

REPRESENTATIVES:

J. Henry Klunk. J. G. Tanner.

Other Publications of Trade News Publishing Co.:

HARNESS (monthly) .....per year, $1.00

AMERICAN HARNESS AND SADDLERY DIRECTORY (annual) .....per copy, $4.00

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam, the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 10 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in ever, respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 25th of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide due Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

A Lost Art.

Excavation work on some prehistoric ruins in certain parts of the country, noticeably in Fulton County, Pa., revealed a peculiar type of wood has been found which suggests possibilities which the scientific spirit of our age might work out to practical results. It seems, at least to the experts who have gone into the investigation, that the handles of axes, tools and other implements were made of a composition material obtained by first taking all the sap out of the wood and then "melting" the wood in a retort, from which the air had been excluded. This product was then run into molds. They say how these wooden handles can be shaved with a sharp knife and are fireproof and will not decay. The wood melting furnaces have been found and the "finds" are to be sent to the Smithsonian Institute.

It would be a very nice thing to take cheap timber now unavailable for carriage or wagon purposes and extract the sap and melt (?) it and run it into spokes, hubs, etc., for vehicle construction, and even other parts, but apart from the reliability of the information given, the probable cost of such manipulation might make the process of only theoretical interest.

Salesmanship.

The art of selling vehicles has greatly improved of late years among the average dealers. Repository or showrooms are clean, well lighted and attractive. There is a variety of vehicles on exhibition. The probable requirements of each community are well studied. There is very little occasion for buyers to shop around to find what they want. Larger stocks are carried. Points are more dwelt on and discussed as to different makes. It used to be a buggy was a buggy, but now each vehicle has its points.

Another growing custom is to mark prices in plain figures. The one-price system is growing in favor. More dealers than formerly are now adding general running expenses to the factory cost plus freight. Hence, there is less break-neck competition, less guessing at the cost of the vehicle on the floor. It is safer than it was a few years ago to allow a buyer to look and walk out. He is more likely to return.

Not Satisfactory.

That there is a considerable percentage of very practical people who are dissatisfied with the present tariff law before it has a chance to be tried is evident to anyone at all observant. That an attempt will be made to amend the new law in several important particulars is also evident. The powers that be, it is needless to say, will stamp out any effort or move in this direction. But the real question is, Who are the powers that be? A few powerful interests with their pliable agents in the halls of Congress or the quiet people in the background?

In one sense it is to be regretted that the agitation is to continue. But it is better to continue to agitate against unsatisfactory legislation than to swallow injustice and suffer. The spirit of the board authorized to look into tariff matters is, as many believe, to smother and pigeonhole agitation rather than to establish duties that are fair and just to American enterprise.

Some Figures Bearing on Leather.

Incidental to the much-discussed subject of the future of leather prices, the following facts may be weighed for their indirect bearing on the leather situation. It is complicated by the fact that the Beef Trust which controls the cattle trade of the country, prefers to sell most of its product to the Leather Trust rather than to the general consumers direct.

In ten years, from 1899 to 1909, the increase in the number of cattle other than milk cows was about 80 per cent, while during that time the population increased about 20 per cent, and yet, during this period, leather advanced.

Imports of hides for the eight months ending August, 1907, were 95,358,265 pounds, and for the same period last year they reached 156,737,999 pounds, an increase of 63 per cent.

These figures hardly suggest a scarcity. The latter

Digitized by Google

figures are the Government's, while the former are tabulated by the highest newspaper authority, the Cincinnati Price Current. It is true that consumption has largely increased, and another fact which should be taken into account is that the South American sources of supply are increasing their outputs.

With all these facts and figures it does look as though some other explanation will have to be offered for high-priced leather than the decline in domestic cattle growing and imports. We are told that future advances are probable, but it is yet to be seen whether the great economic law of supply and demand can be indefinitely violated by trust manipulations.

Labor and Cost of Living.

The possibility of unrest among the ranks of labor is a subject which most manufacturers prefer to ignore. Economists and observers of distinction have been calling attention to the dangers lurking in the advancing cost of living.

The President of the United States alludes to the subject in his recent message. Labor may remain content while abundantly employed, and may not. Conditions are developing which will force this issue sooner or later. Wheat and meats are advancing in common with less necessary products. The brawn of the country is ambitious and determined when aroused. Voluntary advances of wages are now frequently heard of, but in those industries, such as iron, steel and coke, where higher prices permit, the carriage industry is already paying the fullest value of labor and can pay no more.

Income.

The recent delegation consisting of twenty Chicago members of the Illinois Manufacturers' Association and a delegation from the National Association of Agricultural Implement and Vehicle Manufacturers who called upon President Taft and Secretary MacVeagh to ask for more time in which to file schedules under the proposed new corporation tax law, based their plea that they were not quite clear as to the correct interpretation of the word "income" as used in the statute.

The word itself is certainly very elastic and open to many constructions, and in their particular business the interpretation may mean much. In the vehicle and carriage building business the term is perhaps more vague than in most other businesses, as the profits are far from being the enormous ones that some critics would make believe.

The Aeroplane Trust.

The recent incorporation of The Wright Company, the directorate of which consists of many of our leading millionaires, marks another evolution in scientific transit. The phenomenal and rapid growth of aerial navigation negatives rather than affirms the supposition that its development is a danger signal to the automobile and carriage industries. When the automobile was first introduced the same impression prevailed, and it was said that the doom of the horse was sealed. Instead, to-day we find that even more horses are being employed as compared to a year ago. As a matter of fact each serves a different field of transit, and there is room for them all. The fortunes of the newly formed "air" company will be watched with great interest.

DESPITE THE AUTO HORSE VALUES BOOM.

Equine Population of America Increases and Price Doubles in Ten Years.

The total equine rural population of the United States is 27,888,931. These figures are taken from the year book of the United States Department of Agriculture for 1908, and which has just been issued. Divided the equine census shows 23,648,532 horses and 4,240,399 mules. These figures cover the farm and rural district population only, as the cities have not been canvassed for ten years. The city horses would probably make the grand total thirty million.

The year book says further that horses are now worth $95.64 each and mules $107.84 each. These prices are the highest on record, and they indicate a total of about $3,000,000 as the value of the country's horse stock. The price of horses has increased more than 100 per cent in the last ten years, and each succeeding year has seen not only higher prices, but a greater number of horses in the country.

Farm horses alone have increased in numbers from 13,000,000 to 20,000,000 since the year 1909, and in value from $44.61 each to $95.64 each. The 710,000 farm horses of New York State are valued at $81,000,000, an average of about $114 each. Illinois has more farm horses than any other State in the Union, with a total of 1,623,000, valued at $109 each. Only three other States have more than 1,000,000 horses on farms. These are Iowa, with 1,419,000; Texas, with 1,342,000; Kansas, with 1,152,000, and Nebraska, with 1,035,000. Counting horses in cities, however, New York's equine population would doubtless exceed 1,000,000.

New Mexico has the poorest and Rhode Island the best horses in the country, according to the government statistics. The average value in New Mexico is $41 and in Rhode Island $126.

Statistics found in the new year book afford a line on the number of horses now in the world, as follows:

North America	27,888,931
South America	9,511,594
Europe	43,563,225
Asia	11,630,302
Africa	885,113
Oceanic	2,232,408
Total	95,711,573

Russia leads all nations in the number of its horses, with a total of 30,729,165 in its European and Asiatic provinces, though Russia proper is a little behind the United States, having only 20,934,415 horses. Together the two countries possess a majority of all the horses in the world. Germany leads the other countries of Europe with 4,345,043, while Austria-Hungary is a close second with 4,264,571. France ranks third with 3,094,698, and Great Britain and Ireland fourth, with 2,151,[illegible]. Canada has 2,155,490, or more than the mother country; Australia 1,871,608, and British India 1,463,293, while other dependencies swell the total number of horses in the Empire to about 8,500,000.

Domesticated asses, which take the place of horses in many mountainous countries, are far more numerous than American horsemen would be likely to guess. There are 112,000 of them in the United States.

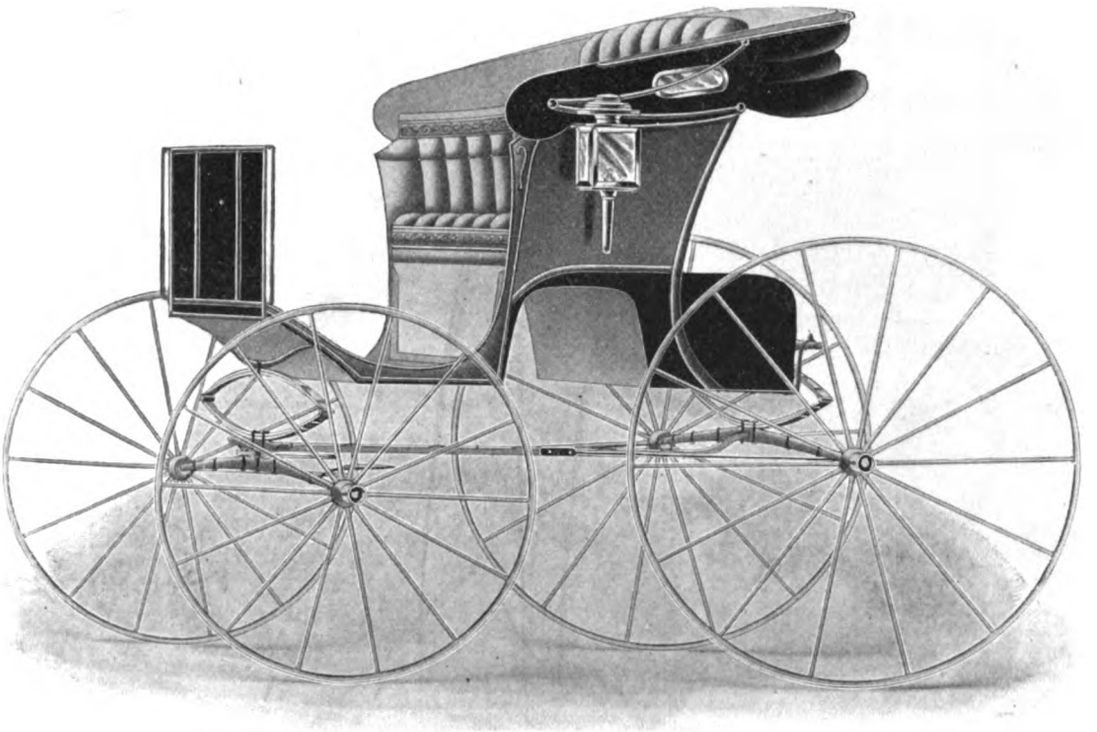
The year book estimates the total number of asses in the world at 8,520,000, as compared with 7,493,000 mules and 95,219,000 horses. The total equine population of the world is thus estimated at 111,232,000.

A TRADE OPENING.

The Consular Department at Washington announces receipt of a report from an American consul in the Far East, stating that a firm in his district has expressed a desire to obtain representation as manufacturer's agent of a good American firm producing chassis for auto buggies (sometimes called motor buggies). The firm in question has written the consul a letter setting out in detail their requirements and giving references, a copy of which can be obtained by interested concerns.

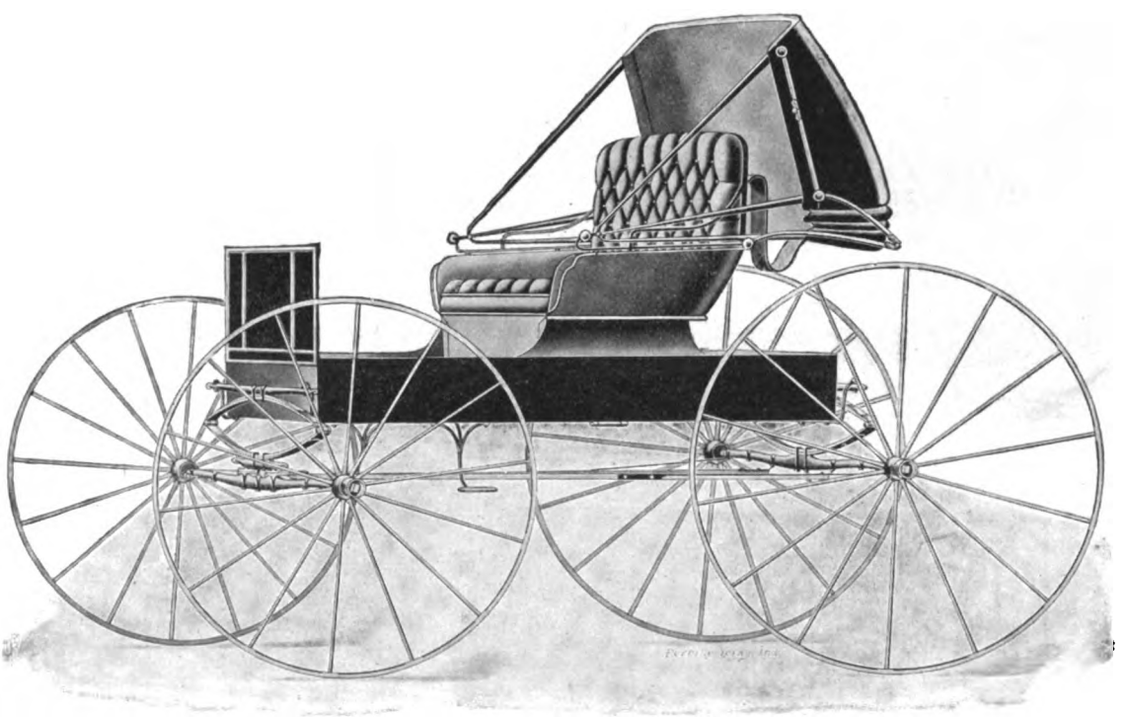
Digitized by Google

Illustrated Carriage Section, December 1909.



VICTORIA TOP STANHOPE.

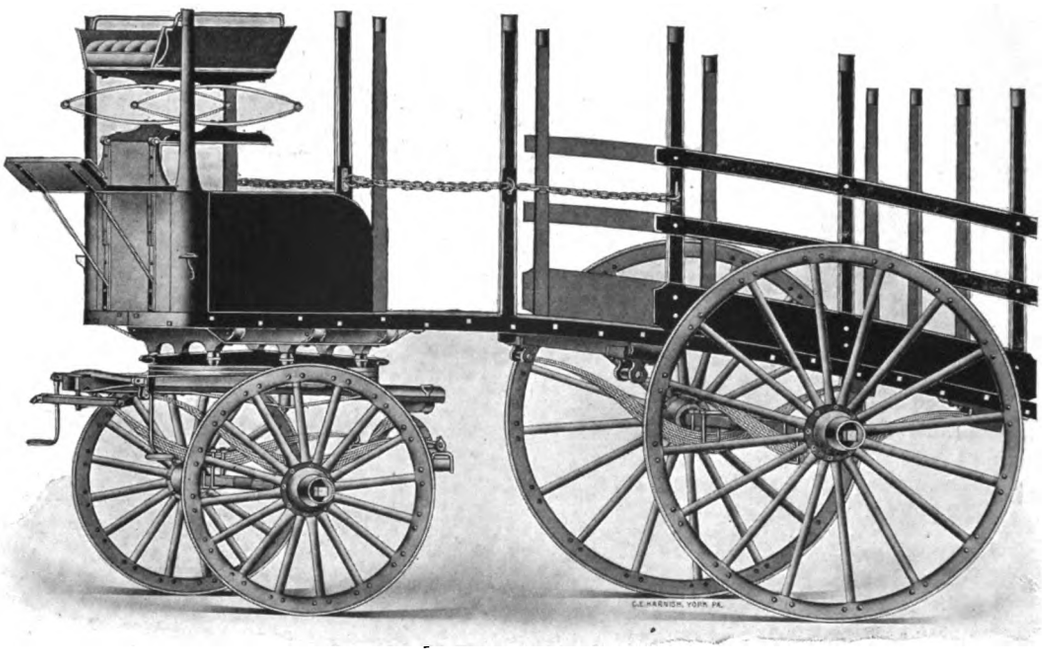
Built by William N. Brockway, Inc., Homer, N. Y.



NEW ENGLAND PANEL SEAT BUGGY.

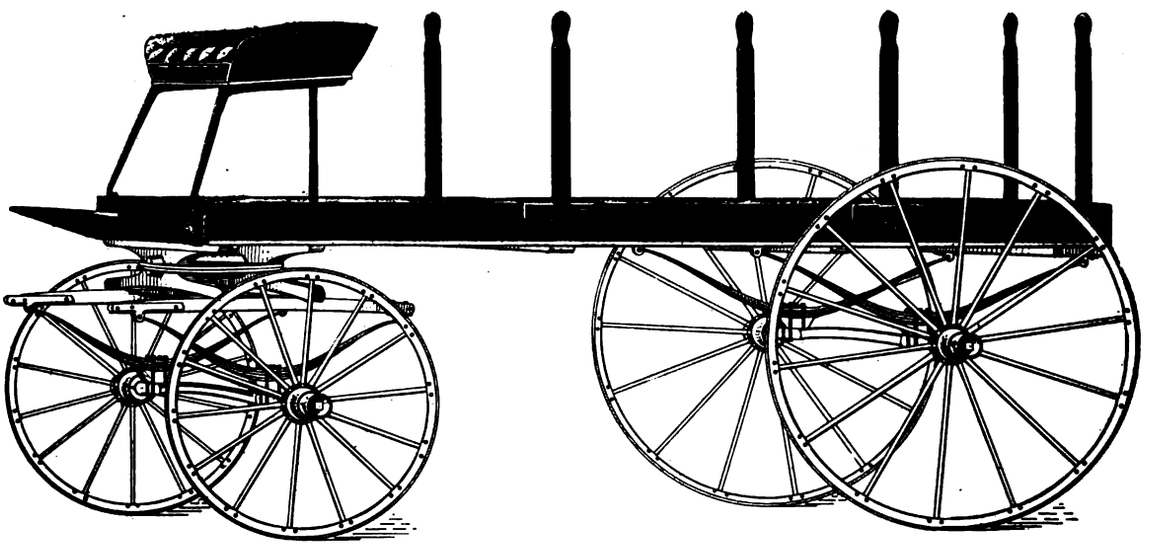
Built by the Peabody Buggy Co., Fostoria, Ohio.

Digitized by Google



STAKE TRUCK.

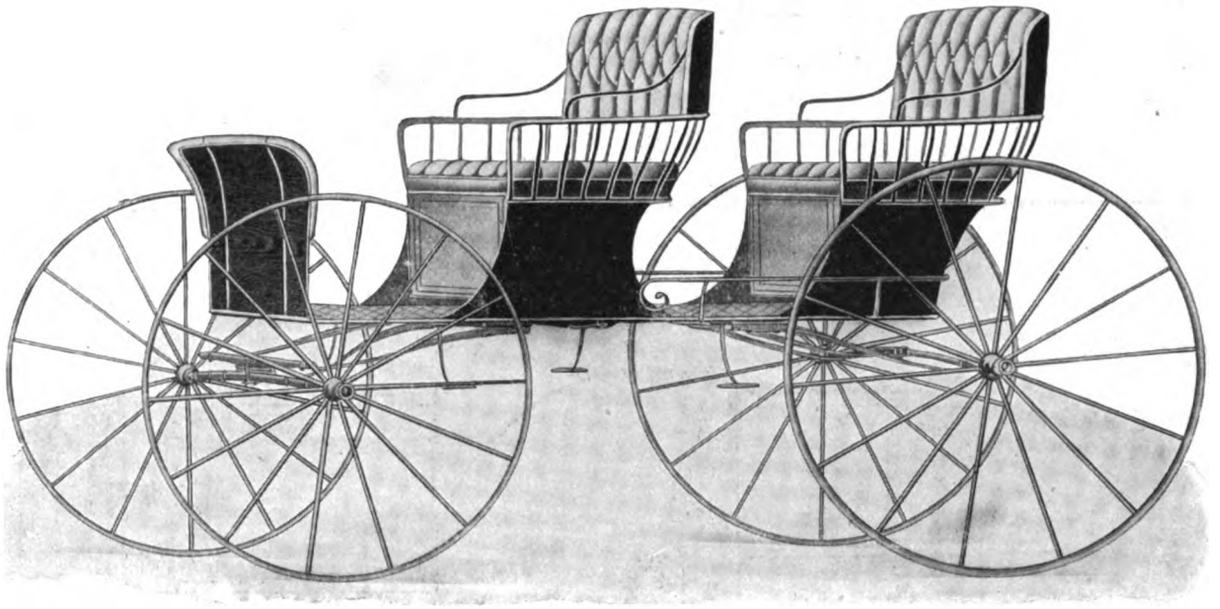
Built by Martin Carriage Works, York, Pa.



GENERAL PURPOSE TRUCK.

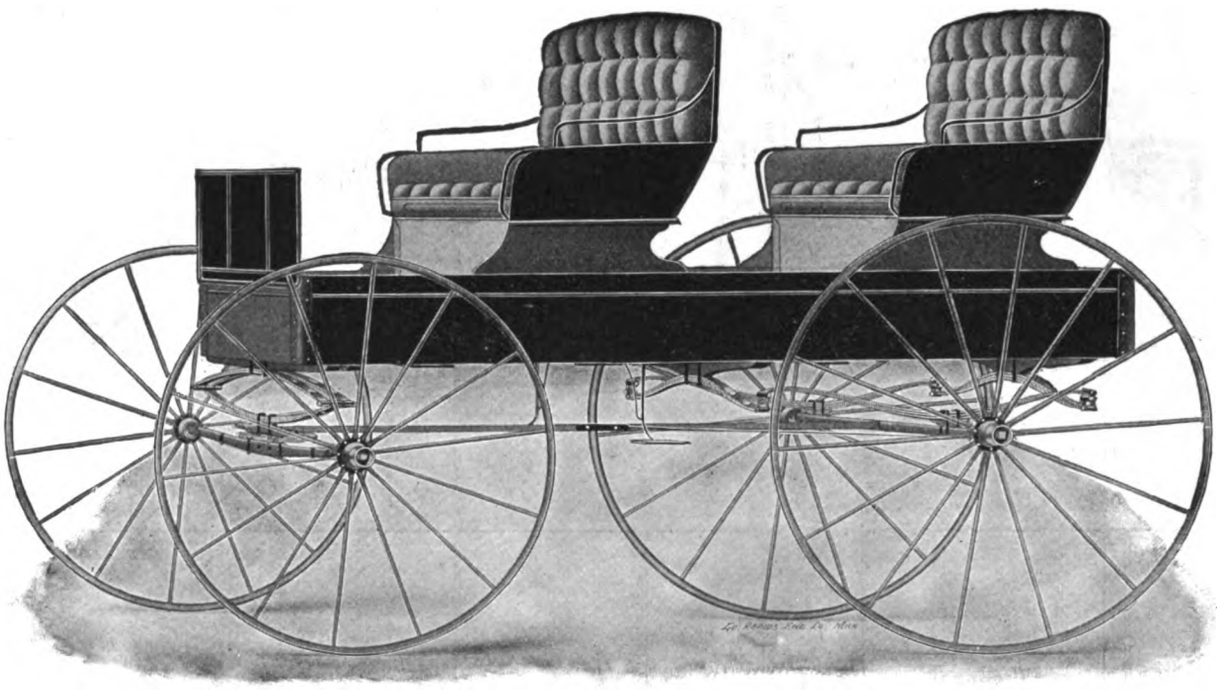
Built by John Deere Plow Co., Moline, Ill.

Digitized by Google



OPEN STICK SEAT BUCKBOARD.

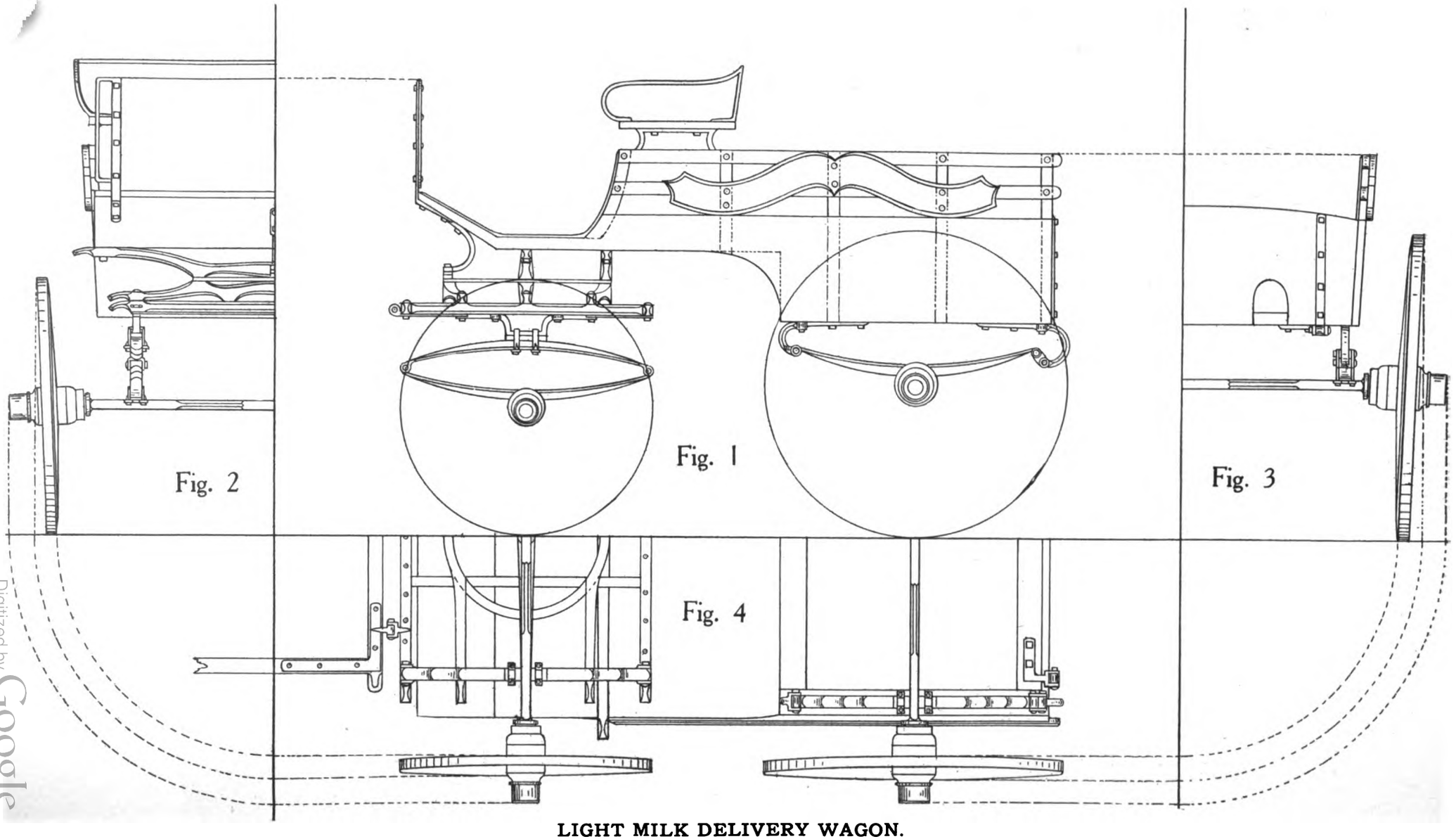
Built by Mifflinburg Buggy Co., Mifflinburg, Pa.



SINGLE REACH COMBINATION SPRING WAGON.

Built by Henney Buggy Co., Freeport, Ill.

Digitized by Google



LIGHT MILK DELIVERY WAGON.

(Described on opposite page.)

Digitized by Google

Wood-working and Smithing

WORKING DRAFT OF LIGHT DELIVERY MILK WAGON.

(Drawing on opposite page.)

The design for a light delivery milk wagon given here is to suit the draft of a 14-hand cob, and to carry two churns of 18-inch bottom diameter in the back of the body. The style of the vehicle is suitable to a hilly locality.

The style of the wagon herewith is only adapted for rear carrying in the body, and for quick delivery from the churns at their taps, as they project through the door opening in Fig. 3. The body is made of solid sides, ⅞-inch stuff. The bottom sides are half-check framed to the sides, and screwed up from underneath and a bead cut in the joint line. The top side rails are bolted to ¼-inch iron pillar standards, which are screwed to the inside of the body side and strap bolted in the ends, or the ends of the irons can be cranked for 1½ inches on the top of the bottom side and bolted down. This plan of framing buttresses the sides and is at the same time a simple and effective way of making a strong job of the work. The body is welled behind for easy loading, while the front body is cut up to allow of the wheels locking underneath with a full clearance when the wagon is loaded. The front bracket bottom side is platformed on the inside, and boarded off at the recess, as shown by the chain lines. The driving seat is raised to a proper driving height from the platform line to give leg room to the driver, the seat resting on side stays, as shown. A name board is fitted to the side rails of the body and fixed with light bolts.

The hanging is on elliptic and grasshopper springs, with platform under gearing in front.

The bottom carriage is the usual plain-framed platform, with the summer bars framed into a width to take the transome wheel plate, as shown in the plan, Fig. 4. The top carriage consists of a center bed and horn bar, while the front of the body is secured with a center stay.

The fellow pieces are made as transome plate bars, back and front, as shown in the elevation and on the plan, and are lightened out from their bearing on the platform.

The front springs are clipped to stays which is a more stylish way in fitting up a gearing of this design than scrolls and grasshopper springs. The framing is plated underneath all round; the feet of the side stays are lip-cheaked to the bottom plates, as shown in Fig 1, the bolts taking both.

The shafts are made with a framed cross bar and corner plated underneath; the fixing to the gearing is with barrel-boss welded to the shaft plate, and the jaw stay welded to the gearing bottom plate as in Fig. 4. The hind hanging is on scrolls and grasshopper springs.

The sizes are: Height of hind wheels, 36 inches; strength of spokes, 1½ inches; tires, 1¼ by 9-16 inches iron; other sizes to standard. Height of front wheels, 30 inches; spokes, 1½ inches; tires, 1¼ by 9-16 inches iron; other sizes to standard.

Length of hind grasshopper springs, 30 inches; number of plates, 5; width of plates, 1⅜ inches; compass over all, 3½ inches. Front springs, 30 inches; number of plates, 4; width of plates, 1⅜ inches; compass over all, 7 inches. Depth of front stay, 2½ inches; depth over platform and beds, 7½ inches; diameter of transome wheel plate, 20 inches; depth of hind front scroll, 4 inches; hind scroll, 5½ inches.

Size of platform framing, 30 inches long by 34 inches wide; width of shafts inside at hind bar, 29 inches.

Length of axles over collars, 44 inches; over flaps, 40 inches; width of collar, 1⅜ by 5 inches; strength of axles 1⅛ inches; length of boxes, 8 inches. Both axles are alike in all measurements. Track of wheels on road, 4 feet 6 inches.

Body.—Length of hind bottom side, 2 feet 8 inches; front bottom side, 2 feet 9½ inches, from the square line; length of bracket rise of bottom side, 5½ inches.

Depth of body side behind, 12 inches; over toy rails from top of side, 8 inches. Depth of neck of body 4 inches; height of seat from bottom of bottomside to top of seat, 15½ inches; depth of seat stays, 2½ inches.

Length of name board, 40 inches by 4 inches wide by ¾ inch thick; width of body on bottom, 42 inches; on top of side over top rail, 44 inches; depth of dash board, 13 inches; from top of bracket to edge of seat, 24½ inches; width of seat 14 inches by 44 inches long. The hinging of the door is in full plating as in Fig. 3. The body is inside cross plated on door line.

The style of this wagon is unique for the work it is designed to meet. It would look best and be more in character as a milk delivery wagon if finished in the natural wood in the body and varnished, also the wheels, while the undergearing throughout should be painted a fine pale yellow and picked out and fine-lined a rich dark blue.

CURVED LINES.

The Methods and the Best Tools to Use in Solving Geometrical Problems.

The inability to master the most elementary problems of geometry is of every-day occurrence, and as an illustration of this the diagrams shown in Figs. 1, 2 and 3 will serve to demonstrate:

With these three illustrations is shown an easy and simple method of making an ellipse that is so accurate it will serve the purpose of any proposition requiring an elliptical shape.

A, Fig. 1, is a piece of board with one edge made straight. B is a narrower piece of board with one straight edge and is nailed on the piece A, making sure that the straight edges of both pieces are at right angles, or 90 degrees, as shown on the

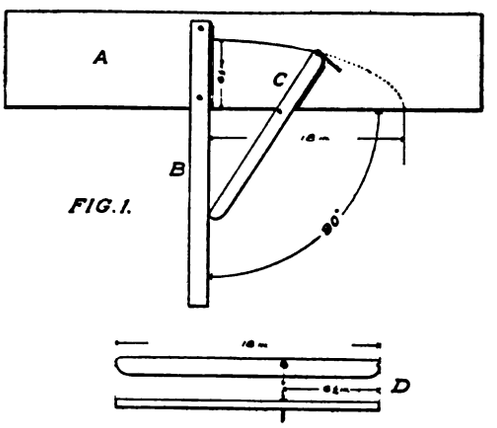


FIG. 1.

above-mentioned figure. C, Fig. 1, is another straight stick which in this case is 18 inches long. This is half the length of the oval that we are to construct and 6½ inches is the half of the width. We, therefore, drive a small wire nail, as shown in D, 6½ inches from one end. Diagram D illustrates the top and side views of stick C, Fig. 1.

Starting as in Fig. 2 and holding a pencil at the edge D, and allowing the nail in C to bear against the straight of A, we move the pencil along the line indicated by the arrow, the end D acting as a guide for the pencil and the end E bearing against the

Digitized by Google

straight edge of B, and the nail bearing against the edge of A form two points of contact which give the desired shape of a true one-quarter oval. This can be used as a pattern to complete the full figure. Figs. 1, 2 and 3 show the guide of C in three different positions of its course in making the quarter oval.

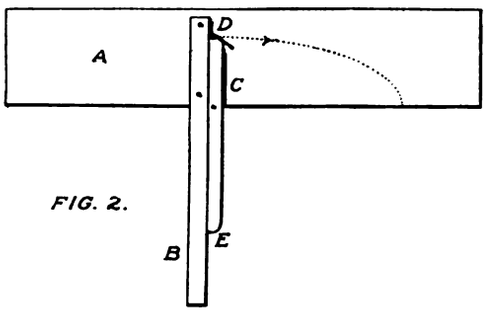


FIG. 2.

Fig. 5 shows a home-made tool that, so far as the writer in the Automobile Dealer and Repairer is aware, is without a name. Its use is for the same purpose as the foregoing illustrations, namely, to construct a true oval of any given length and width. This is an improvement, however, as the full shape of the oval can be drawn out once, whereas with the previous illustrations, Figs. 1, 2 and 3, it is necessary to construct a pattern of the quarter section in order to complete the figure.

Fig. 4 shows the assembly of the parts as illustrated in Figs. 5 and 6. In the original of this drawing all the parts are of

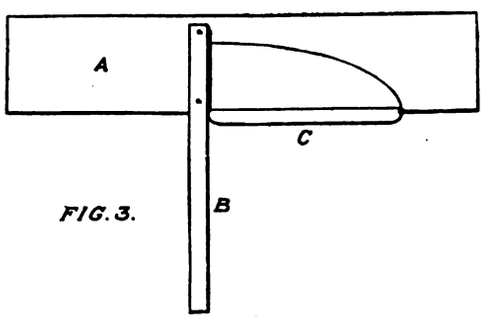


FIG. 3.

wood except the pins that travel in the groove and a small slide plate in the posts. These are made of bone (see Fig. 5). The bar in this same figure is ⅝ inch square, of wood, and is mortised through the posts. In Fig. 6 the cross is 1 inch square at the ends and in the center is 1 inch by 1⅜ inches, made of wood. The groove is ¼ inch deep by ¼ inch wide. If the tool is to be used for ovals less than 24 inches long it is advisable to make it lighter.

To make use of this tool the rule is the same as for Figs. 1

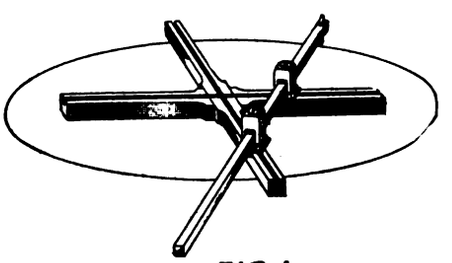


FIG.4.

to 3. The pencil corresponds to the end D, the post nearest the pencil to the nail in C and the other post to the end E. Having located the posts on the bar the right distance from the pencil, as illustrated in Fig. 5, it is only necessary to place the post pins, Fig. 5, in the grooves of Fig. 6 (see assembly, Fig. 4). We now draw the pencil along the paper, allowing the pins to travel freely in the grooves and we have the desired oval.

Fig. 7 illustrates a simple method of making a true sweep. This is very useful in making patterns for bow sweeps, etc., and also the handy man around the garage at times has need of making a true sweep for partitions or for repair work.

For our illustration we have selected a curve 5 feet long by 3 inches high, and F, Fig. 7, shows a piece of board with these

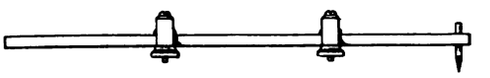


FIG.5.

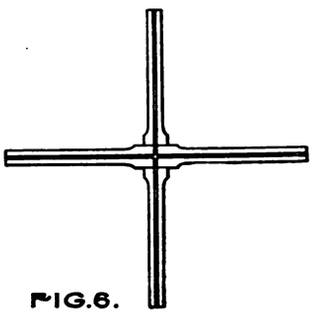


FIG.6.

dimensions marked on it and also a curved line meeting the three points. On Fig. 8 we show the method of making this curved line by the aid of the two pieces of board, G, G, fastened together, and Fig. 9 shows G, G, in detail.

To explain the process of making this curved line: After deciding that it is to be 5 feet long and to have 3 inches raise, or curve, on the piece of board F, Fig. 7, draw a straight line. On

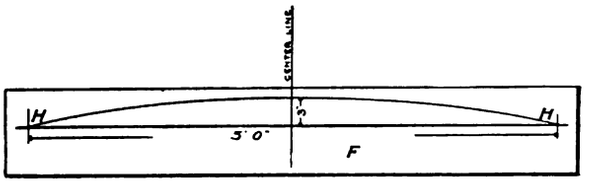


FIG.7.

this straight line lay off 5 feet, H, H, half way between these points draw a perpendicular center line and from the base line on this center line lay off 3 inches, as illustrated in Fig. 7. Then place the two strips of board, G, G, in position, touching these

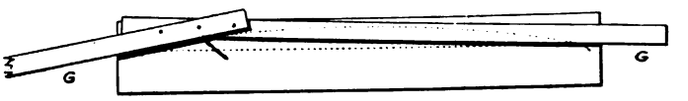


FIG.8.

points that have been measured off and nail them together, as illustrated in Fig. 9. The strips, G, G, must be each 5 feet long from the point where they cross each other to the end. You will see the reason of this in Fig. 8. Having driven a long nail in the board F at each point, H, H, and holding a pencil at the

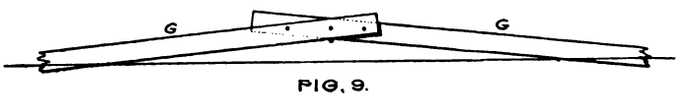


FIG.9.

apex of the angle formed by G, G, we move the pencil guided by the pieces G, G, which in turn are bearing against the nails at H, H, each way from the center, as in Fig. 8, and this gives us the curved line as illustrated in Fig. 7.

E. D. CLAPP COMPANY CHANGES.

E. Donaldson Clapp has been elected treasurer of the E. D. Clapp Manufacturing Company, of Auburn, N. Y., in place of F. A. Eldredge, and he will move to Auburn from Chicago where he has been the western representative of the company for several years. Mr. Clapp is the grandson and namesake of Emerous D. Clapp, who founded the company in 1864. Wm. S. Lee succeeds H. D. Fitus as vice-president and secretary in place of F. A. Eldredge.

Digitized by Google

Carriage, Wagon and Automobile Painting

SOME SURFACING DETAILS.

The painter usually has more trouble in getting the surface upon old work in good shape than he does with the new. In bringing up another old carriage, wagon or automobile body to the right surface to finish upon, without burning the old paint off, the old and possibly crisp, shelly paint should be sandpapered down close and hard with No. 2 sandpaper. Any surface fractures in which the wood is splintered and torn up should be dressed down and cut out until the firm wood is exposed. After sanding the old pain until a solid surface is obtained, whip enough white lead, saddened with lampblack, in six parts of turpentine and one part raw linseed oil, to coat in the surface, and apply with a chisel point, oval bristle brush. After a couple of days go carefully over the surface and putty all defects with a putty composed of three parts dry white lead and one part whiting, worked up to a stiff consistency in equal parts of rubbing varnish and coach japan, and then reduce a trifle with turpentine. Lay the putty on smooth and catch every defect. Next prepare a pigment composed of two parts, by weight, of white lead and one part of roughstuff filler, beating to a heavy paste in equal parts of rubbing varnish and coach japan, then thinning to the required consistency with turpentine. Apply a coat of this filler, and the next day carefully examine the surface for any overlooked defects. which, if found, putty. Should any rough patches of surface be found, add enough turpentine to some of the putty above described to reduce it to a glaze consistency, and with a broad, elastic knife "face up" the rough sections. The essential point is, in this class of work, to perfect every detail so that when the final coat of roughstuff, or the final coat of lead or other sandpaper surfacer, in case roughstuff is not used, is applied, the surface is fully rounded out with the pigment and putty necessary to develop its proper proportions. The most important detail, in our estimation, is that of getting the surface dressed down to rock-bottom solidity and soundness in preparation for coating up. Without a good foundation all else is a vain show.

ONE QUICK WAY TO REPAINT.

When a man brings into my shop for repairing a carriage, automobile or other vehicle which has already been repainted several times and which has become cracked, probably owing to a poor repainting job, and says that he wants a good looking job done, with all the cracks hidden, but says that he does not want to pay much, this is the way I do it: First of all I unhang the vehicle as it is far more convenient to get at for painting and really saves time in the end when you consider how much time you waste in climbing under and over the vehicle, and all the bending and twisting you have to do. After I get the body all cleaned and sandpapered I give it a thorough coating of rough mixture which I make myself. When this is dry I putty or glaze all over, filling in all the cracks and making it smooth, then I sandpaper this putty down and give the body a good coat of lampblack, in which I use lots of raw oil, as it holds the putty and binds it well. Now I am ready to put on the other coats. If you prefer, you could run the putty down with lump pumice stone and water. This would give you a better surface. Some painters claim that if putty is rubbed with water it will swell, but I claim that it will not if it is properly mixed and the putty and rough stuff is thoroughly dry on your body.

Here is still another way to smooth the surface after the body is puttied: Do not sandpaper, but put on two or more coats of filler, rub all down together and give a coat of color, then a coat of color varnish. After this rub and finish. This is the old quick way. Any of the "fillers" or "surfacers" advertised in The Hub are good for this work. When you have the body "ready for color," as we painters call it, instead of using color you can use what is called "solid covering color varnish." You can put this right on top of your rubbed-off body, and you will find that it covers well and will save color and color varnish, as well as the time it takes to put this latter on.

Now for the gears: Clean them thoroughly and sandpaper well, then give them a coat of rough stuff with lots of keg white lead and oil in it. Put this on with a bristle brush and work it heavily so as to get plenty on. When this is dry, putty, then when the putty is dry sandpaper well all over. I use rough stuff so that it will give it a grit and will make sauce sand. This will fill the cracks up and make a good surface too. If gear is to be black or green, give it a coat of lampblack with oil in it. This is also a good stuff to fill up with. If the gears are to be red use Indian red, as it is also a good filler. Then give the gear a coat of the color it is to be, then a coat of color varnish. It is then ready for striping and finishing. This is one way of doing a cheap good job and filling up the cracks, and it is a pretty good way, too, for what is the use of using up a lot of time when you can get so many good fillers, surfacers, color rubbing varnish, etc., all ready for use. These are certainly a great help to the poor carriage painter. for he has more trouble than those in any other department of the trade. He is supposed to put on the finishing touches and cover up all defects. He is also often called upon to help the woodworker, the blacksmith or the trimmer.

W. A. R.

A FEW REMARKS ABOUT THAT POOR CARRIAGE PAINTER.

In all small towns the carriage paint shop has more or less competition, which brings the prices for repainting carriages or automobiles away down. This should not be done, especially on an automobile job, for when you get one of these into a small shop you certainly have a job on your hands. I painted one in a small shop not long ago, and I had to pain the gear part in a shed back of the shop. I had no way of raising the gear so that I could get at it properly, and so had to paint part of the time lying on my back. I got the body to look pretty well, but the running parts spoiled the whole thing. This job had to be done cheaply because it was done in a "small shop" where there was not every convenience for doing it properly. This is the kind of work that makes it hard on the shops that are prepared to handle such jobs, and in consequence the poor painter gets a knock on wages.

I revarnished another automobile some time ago in a small city. It could not be gotten into the paint shop without being taken apart, so it was done altogether in the repository. It was a two-seated automobile, and I gave it a coat of color, striped and finished it. This job was done for $15, so you can imagine how much the poor painter would get out of it.

No shop should take a painting job unless they are so fixed that they can do it properly. It hurts all concerned. If you are going to do this heavy automobile work, prepare for it, and by all means get good prices for your work. Owners of automobiles are usually people who want the best of everything and are willing to pay for it. If you do this, automobile owners will soon get it out of their heads that a good job cannot be done in the shops of a small town.

Automobile painting is done just the same as on other ve-

Digitized by Google

hicles. The majority of automobiles that come into the paint shops are just to be touched up and revarnished, as their original painting is usually good and lasts a long time before it is necessary to have it burned off. The first time in the shop it is generally to be revarnished, the second time to have the cracks doctored up and revarnished, and the third time it is usually a job of burning and scraping. The many new mixtures made by some of the paint and varnish concerns are just the things for this automobile work.

Prepare now to take in automobile jobs in addition to your usual carriage and wagon work, and keep up your prices; do not commence by cutting them. This will be the salvation of the carriage painter, as well as other mechanics connected with the vehicle industry. W. A. R.

VARNISH ROOM NOTES.

Strain all varnish, rubbing or finishing, regardless of the baker's name. It is a precautionary measure and that's what is needed in the varnish room.

Spots of known or unknown origin may in some cases be removed and in others made less distinct by moistening with a mixture of equal parts of raw linseed oil, turpentine and pure grain alcohol. Apply with a soft cloth, and when the spots re obliterated, or removed as far as possible, rub over lightly ith a clean piece of blotting paper. This is not an infallible medy, but in many cases it will effect a cure.

The varnish room should have plenty of effective ventilation. And it should have facilities for drying the air in case an over supply of moisture is present. Moisture condensing upon a varnish not thoroughly hard causes the varnish to bloom. Rapid change of temperature, or the presence of fetid fumes are also quite likely to cause the varnish to bloom. It is rare that washing the surface will cure a well developed case of varnish blooming.

Fire checks in a recently varnished surface are not infrequently caused by the sudden drop of the temperature in the varnish room, thus chilling the varnish, and forcing it to contract to the extent of developing the fine, thread-like fissures characteristic of this form of surface fractures. Permitting the varnish to become thoroughly dry, resurfacing and revarnishing will effect a cure.

Despite the advice sometimes cheerfully given, do not attempt to change the quality or character of your varnish by mixing or thinning it with linseed oil, turpentine or any other thinning medium. Use the varnish straight as received from the maker, and then hold him strictly responsible for its quality, working, drying and other properties.

Varnish the surface rubbed upon varnish the same day—within a few hours, in fact—of the final rubbing. Where an interval of several hours, or the night hours, are allowed to elapse between the rubbing of the varnish and revarnishing a sufficient scum of poisonous substance is sure to accumulate to injure or render void the following coat of varnish. A light rubbing of the surface offers a cheap and effective preventive of varnish mishaps due to the above particular condition of the surface.

Occasionally the force of circumstances compel rubbing the varnish before it is thoroughly hard, which, of course, ought never to be done. When this rubbing takes place the pumice stone flour is likely to be ground into the surface until it shows a milky appearance. To eliminate this wash the rubbing pad free of all pumice stone flour, and then wetting it up well with clean water, "water rub" the varnish until all traces of the pumice stone disappear.

All first-class varnishers recognize the value, or rather the necessity, of washing the surface absolutely clean of all sediment, dust and other matter in preparation for the succeeding coat of varnish.

Around all moldings, curving and edges the wash tool should be carefully used in connection with plenty of water. Washing is even more important than dusting and both are quite indispensible, as the premier varnishers will tell you.

A practice of dusting and cleaning the surface observed by some finishers consists of first going over the surface in a very thorough way with the duster, after which, with a perfectly clean piece of silk, it is wiped carefully over for the purpose of catching up all existing flocculent substances. Then immediately apply the varnish.

Avoid all fussy operations about the varnish room. Work in this apartment as you would in any other one about the paint shop—that is, in a perfectly business-like way. The nervous, fussy jack-in-the-box sort of a man has never yet proved, nor is he likely to prove, a successful varnisher. The varnish room is no sacred nor mysterious place. Live flesh-and-blood men are paid to inhabit it. Only by acting and working and thinking in a rational way, and using the best possible skill, and putting aside all this palaver about magic and tip-toe antics, may we hope to achieve success in the varnish room.

CLEANING PAINT POTS, VARNISH PAILS, KETTLES, ETC.

Why use paint and varnish bedaubed pots and pails, uncleanly both outside and inside? Clean work can only be accomplished by using paint, color and varnish from clean receptacles. Visit many shops and you may see the painters and varnishers using material out of pots and pails fairly encrusted in dry pigments and varnishes. These constantly yield atoms of hard material which serve to granulate the surface and destroy its good looks.

To prevent such conditions have the local tinsmith furnish a 15-gallon galvanized iron can, with cover attached, and handles affixed, into which pour 10 gallons of water, then adding a couple of pounds of concentrated lye.

At the close of the day's work tumble the color pails and the varnish pails into this can, removing them in the morning, after which they may be washed out quickly in soap and water. By increasing the caustic strength of the solution, paint pails encrusted with hard pigment may be nicely cleaned.

BREWSTER & CO. WILL LOCATE NEXT TO VANDERBILTS.

Brewster & Co. have leased the old home of Miss Frederick Gallatin at 670 Fifth Avenue, New York, and will alter the building and use it as a showroom for their carriages and automobiles.

Brewster & Co. recently bought a large plot in Long Island City on which is being built a manufacturing plant for their carriage and automobile business.

Adjoining the Gallatin house is the home of W. K. Vanderbilt, Jr., and at the northwest corner of 52d Street is the home of W. K. Vanderbilt, the three structures occupying the entire block front from 52d Street to 53d Street. Opposite the Gallatin house is St. Thomas' Church.

A member of the Brewster concern said that he realized that establishing a business place among the homes of those who for years have been striving to pervent such an occurrence would not be pleasant news for many, but he added that there would be no alteration made that was not in good taste.

LIGGETT BUYS HATCHER COMPANY.

The factory and plant of the Hatcher Auto-Parts Company, of Cleveland, has been purchased by the Liggett Spring & Axle Company, of Pittsburg. The specialties which have been manufactured by the Hatcher people will be continued at the Cleveland plant, and Wm. A. Cluff, who has been manager of the Hatcher works for the past five years, will remain in charge. In addition the Liggett Company will continue to turn out from its works at Monongahela, Pa., all types of high-grade automobile springs and axles. The company is also making roller bearings of an improved type.

Digitized by Google

C. M. A. TAKES ACTION ON UNIFORM VEHICLE WARRANTY.

Closer Relations Between Manufacturer and Dealer Sought—Association Elects Officers.

The matter of uniform vehicle warranty has been taken up by the Carriage Manufacturers' Association of America in a manner which indicates a desire to have the problem solved satisfactorily to both manufacturers and dealers. This subject was discussed at some length at the annual meeting of the association held in Chicago, November 11, and a committee was appointed to draft a waranty that will be just to manufacturer, dealer and the consumer, one which can be approved by the association, accepted by the dealers, through the National Federation of Retail Implement and Vehicle Dealers' Associations, and thus become the official vehicle warranty. It is hoped that this plan will eventually do away with individual warranties.

The matter of shorter terms and aim to bring about a reform in that phase of the business was also discussed. The co-operation of dealers will be sought. The members of the association feel that most dealers, especially those allied with the dealers' associations, have come to look upon manufacturers as their friends and are desirous of meeting and treating with them as such. These conditions are admittedly the direct result of organized effort and co-operation between manufacturers and dealers through associations.

That there is need of further effort in a co-operative way, to correct abuses and bring about reforms that will benefit both manufacturer and dealer, was the sense of the meeting. This is especially true in the matter of selling terms. The manufacturers believe that many dealers prefer shorter terms rather than the present plan of long terms, which keeps irresponsible dealers in the business on capital supplied by the manufacturers. There was manifested a strong sentiment in favor of co-operation with other manufacturers' associations, as well as the dealers' asociations, along the lines named.

Reports of officers show that the association has made substantial progress during the past year, notably in the acquisition of new members. The transfer of its headquarters from Cincinnati to Chicago and the election of a permanent secretary has had much to do with the added interest and increase in membership. The association reaffirmed its object, which is to establish more agreeable relations between manufacturers and such reforms as will improve the relations between the manufacturers and dealers.

The following officers were elected:

President—C. C. Hull, of Connersville, Ind.

Vice-Presidents—H. M. Foulk, for Wisconsin; S. G. Gay, for Illinois; George Wheelock, for Indiana; W. A. Sayers, for Ohio; Robert Brodie, for Kentucky; C. H. Sapp, for Michigan.

Treasurer—F. C. Matthews.

Secretary—W. A. Merifield.

WAGON ASSOCIATION ELECTS OFFICERS.

The National Wagon Manufacturers' Association held its annual meeting in Chicago November 17. Trade conditions and prospects were discussed and it was shown that the manufacturers generally regard the outlook as favorable and are looking forward to good trade in 1910.

The following officers were elected:

President—B. M. Blount, of the White Hickory Wagon Manufacturing Company, Atlanta, Ga.

First Vice-President—H. K. Wolcott, of the Newton Wagon Company, Batavia, Ill.

Second Vice-President—W. A. Steele, of the Owensboro Wagon Company, Owensboro, Ky.

Secretary and Treasurer—E. W. McCullough, Chicago.

Chairman of Executive Committee—H. M. Kinney, of the Winona Wagon Company. Winona, Minn.

MICHIGAN RETAILERS' CONVENTION.

Re-elect Old Officers With Exception of President—Meeting Next Year at Jackson.

The largest and most satisfactory annual convention ever held by the Michigan Retail Implement and Vehicle Dealers' Association was the sixth, at Flint, from November 9 to 12, 400 being in attendance. The next convention will be held in Jackson. The result of the election of officers follows: William Goodes, Flint, president; L. C. Mount, Homer, vice-president; J. F. Carlton, Jackson, treasurer; W. L. C. Reid, Jackson. New directors: C. L. Glasgow, Nashville; P. E. Dunham, Lapeer; W. O. Barton, Portland; Ernest Paul, Pigeon. The treasurer's report showed a balance on hand of $518.97. Paul E. Dunham, who retires as president, was the only one not re-elected.

Two amendments to the constitution were adopted, giving more power to the board of directors; an official emblem was adopted and a plan was made to extend the county organizations by paying one member of the association in each county a salary to organize an auxiliary county, instead of having a regular traveling organizer. It was resolved that each member of the association do all in his power to insure the enforcement of the State law that compels the labeling of all binder twine. The association is opposed to the prison binder twine plant. The preying catalogue houses were discussed, as were plans of insurance and legislation, but there was no definite action on these subjects.

There was a big banquet for the visiting members at the Hotel Dryden, and the ladies had a spread of their own at the Hotel Bryant. At the members' meeting Geo. W. Hubbard, the toastmaster, was introduced by J. D. Dort, and Rev. W. Dudley Powers invoked the blessing. The following toasts were responded to: "Where the Wheels Wirl," W. V. Smith; "Implements," Rev. C. A. Lippincott; "All Wool and a Yard Wide," Hon. H. D. Aitkin; "Repairs and Allowances," F. [illegible] Rankin; "Wagons," Rev. W. Dudley Powers; "Buzz Wagons," W. H. Little; "The Men With the Grip," Frank R. Streat.

The banquet committee consisted of W. A. Fisher, chairman; P. R. Dougherty, W. C. Wells, W. H. Little, C. W. Nash and E. A. Aldrich.

Here is a significant point from the speech of welcome by J D. Dort: "The new kind of vehicle—the automobile—is making great progress, but we still rally around the standard of the horse-drawn vehicle, for you cannot beat the horse. You can put anything you want parallel with the horse, but you can never put it ahead of him, and to prove that the horse is with us to stay we have only to look at the United States census report of last year, which states that there were 600,000 more horses in the country last year than the year before, and I venture to say that the greater part of these will draw some kind of a vehicle."

PHILADELPHIA CARRIAGE AND WAGON BUILDERS.

There had been arranged a discussion on "Leather," its manufacture and uses, for the regular monthly meeting of the Carriage and Wagon Builders' Association of Philadelphia, held in the Bourse on the evening of Friday, November 19, but owing to the fact that the speaker was called to another city, the subject was postponed.

A representative of the Carnegie Steel Co., Pittsburg, Pa., will address the asociation on the subject of "Steel and Steel Making" at the December meeting. It is expected that the lecture will be illustrated with models, etc., to demonstrate the various processes from start to finish.

The automobile, in its relation to the carriage and wagon industry came up for discussion, and instructive and suggestive talks were given by several members. It was brought out in this debate that Philadelphia was one of the last cities in the country to feel the effects of the motor car on the fine carriage trade.

Digitized by Google

PROBLEM OF COSTS.

Dealers' and Jobbers' Conference Tells How to Increase the Profits.

Cost accounting in its relation to increased profits in the retail vehicle and implement trade was the subject of much discussion among both retailers and manufacturers at Chicago in October. The convention of the National Federation of Retail Implement and Vehicle Dealers' Association went into the matter fully and received a detailed report on the problem.

This report was the result of an inquiry authorized by a joint conference of retail dealers, jobbers and manufacturers held in Baltimore last winter. The Inquiry Committee was composed of the president and secretary of the following associations: National Wagon Manufacturers' Asociation, Carriage Manufacturers' Association of America, Carriage Builders' National Association, National Plow Association, National Association of Agricultural Implement and Vehicle Manufacturers, National Federation of Retail Implement and Vehicle Dealers' Associations; also two delegates from each of the implement and vehicle clubs of Kansas City, St. Louis, Minneapolis, Dallas, Omaha, Oklahoma City, Des Moines and Peoria; also the implement trade journals by accredited representatives. E. W. McCullough, secretary of the National Wagon Manufacturers' Association, was elected chairman.

The committee in addition to investigating conditions was asked to make recommendations. Information was collected through blank reports, 85 out of 200 being returned. The following table shows the percentage of cost of doing business in the States named.

The Cost to Dealers.

	Business.	Capital.	Gross Sales.	Expense Percent on Gross Sales.
Colorado	Hardware, etc.	$45,000	$73,000	.17+
Idaho	Hwd., Imp. & Veh.	20,000	50,000	.20
Illinois	Impl. & Veh.	20,000	40,000	.14
Illinois-So	Implements	30,000	60,000	.15
Indiana	Hdw., Imp. & Veh.	10,000	27,585	.19
Iowa	Impl. & Veh.	18,000	52,000	.21
Kansas & Missouri	Impl. & Veh.	72,000	117,000	.20+
Michigan	Hdw., Imp. & Veh.	7,500	26,500	.19+
Minnesota	Impl. & Hdw.	14,000	40,000	.17
N. Dakota	Implements	19,500	37,500	.17
Oklahoma	Hdw., Imp. & Veh.	50,000	80,273	.19+
Oregon	Implements	21,000	35,300	.17+
Ohio	Veh. & Harness	7,000	12,000	.22+
S. W. Kan & Okla.	Hdw. & Impl.	25,000	84,000	.17+
S. Dakota	Hdw. & Impl.	14,000	40,000	.15
Texas	Hdw. & Impl.	35,000	120,000	.14
Washington	Hdw. & Impl.	25,000	57,600	.17
Wisconsin	Hdw. & Impl.	20,000	35,000	.19

By way of improving matters the committee advised the creation of a cost accounting bureau to collect data and distribute plans and information to the trade.

Valuable Pointers.

In addition to the foregoing the committee offered the following suggestions to dealers:

Charge interest on the net amount of your total investment at the beginning of your business year exclusive of real estate.

Charge rental on real estate or buildings owned by you and used in your business at a rate equal to that which you would receive if renting or leasing it to others.

Charge in addition to what you pay for hired help, an amount equal to what your services would be worth to others, also that in like manner the services of any member of your family employed in the business not on your regular pay roll.

Charge depreciation on all goods carried over on which you may have to make a less price because of change in style, damage or any other cause.

Charge depreciation on buildings, tools, fixtures or anything else suffering from age or wear and tear.

Charge amounts donated or subscriptions paid.

Charge all fixed expense, such as taxes, insurance, water, lights, fuel, etc.

Charge all incidental expenses, such as drayage, postage, office supplies, livery or expense of horses and wagons, telegrams and telephones, advertising, canvassing, etc.

Charge loss of every character including goods stolen or sent out and not charged, allowances made customers, bad debts, etc.

Charge collection expense.

Charge any other expense not enumerated above.

When you have ascertained what the sum of all the foregoing items amounts to, prove it by your books, and you will have your total expense for the year, then divide this figure by the total of your sales and it will show the per cent which it has cost you to do business.

Go over the selling prices of the various articles you handle and see where you stand as to profits, then get busy in putting your selling figures on a profitable basis, and talk it over with your competitor as well.

ENGLISH CARRIAGE BUILDERS TAKING UP THE AEROPLANE.

There are signs that the carriage building trade has decided at once to take up what aeroplane building there may be to do, which quantity is, of course, very small. says the Automobile and Carriage Builders' Journal of London. There is going to be no laggage behind. no hesitation as was evident in many quarters when motors were noisy. "Do not let us humbug ourselves," says a prominent motorist, "in believing that one can sell aeroplanes like bicycles and motor cars, unless one is perfectly callous of the many people whom it would be little short of manslaughter to supply an aeroplane to as at present made." However, those who have the money and leisure to experiment, want the ash framework of the machines constructed, and the carriage biulder has the stuff and workmen who should be able to make it. but lightness, of course, must be studied above all things. One prominent West End carriage builder is openly advertising that he constructs aeroplanes, and is booking orders for all kinds of flying machines. In this front shop we read "Estimates free—enquiries invited from aviators and others—all work executed on the premises and open to inspection of customers." A monoplane was being constructed in the front shop, and naturally an appreciative crowd was watching the "body-makers" (I suppose the term still holds good) at work.

BIG WAGON WHEELS FOR ALASKA.

Seattle (Wash.) papers tell with pride of a local wheel-making achievement. It is announced that the largest wagon wheels ever made have just been finished in the George W. Hoffman Carriage Works there for W. J. Roe, a drayman and contractor of Nome, Alaska. They are 12 feet hight and weigh about 3,500 pounds each. They will be used by Roe to haul heavy machinery over the tundra.

The wheels are two feet larger than any others ever built, 10-foot wheels having been constructed for the purpose of hauling logs and big timbers. The Hoffman wheels are of fir, except the iron rim, which is 14 inches wide and five-eighths of an inch thick. The rim is shrunk onto the felloes in two parts.

NEW AUTO AXLE PLANT AT FORT WAYNE.

A company has been formed here for the manufacture of the auto axle, invented by James Keenan, of South Bend. The article is protected by a patent, but is said to have met with favor from automobile manufacturers. The company, which is to have a capital stock of $100,000, will be composed of A. B. White, Edward White and Harry Sprague.

The Washington Wagon Co. has been organized in Louisville, Ky., by A. P. Speed and others.

Digitized by Google

SPECIAL TRADE NEWS FROM MICHIGAN

Newsy Notes by our Correspondent Concerning Well Known Carriage and Automobile Manufacturers in the Wolverine State.

The General Motors' Latest "Gobble."—The Carter Car Co., of Pontiac, and the Elmore Automobile Co., of Clyde, O., are the two latest auto concerns to be gobbled up by the voracious General Motors Co., which did a $34,000,000 business for the year ending September 30 last. The General Motors Co. has announced that it will build its huge central plant in Detroit, giving employment to some 7,000 hands. The Cadillac in Detroit, the Buick in Flint and the other plants in Pontiac, Saginaw and elsewhere will be continued and enlarged as their needs demand. The site and construction of the new central plant will cost at least $2,500,000 and the building will occupy 40 acres of ground. The general design will be a replica of the General Motors plant in Flint. All component parts of the autos, including the tires, will be manufactured at the Detroit plant.

Making Money Under Receiver.—The report of the Ionia Wagon Works shows that the company, since the receivership, is more prosperous than ever in its history. Expenses have been reduced and many new contracts accepted. There is a balance of $10,000 on hand to pay claims of creditors on the old account.

Light Spring Wagons Will Supplant the Heavy Wagon.—"Wagons will continue to be made and sold," says Chas. E. Belknap, of the Belknap Wagon Works, Grand Rapids, "but the business will never be what it used to be. The roads are such that the farmers don't need heavy wagons as a rule, and whenever they have large crops to be moved the light spring wagon serves their purpose. Conditions have changed and it isn't all to be laid to the automobile."

New Steel Auto Axle Company.—What it is expected will take rank as one of the largest industries in the Detroit automobile field is the New Metal Products Co., which has $200,000 capital stock. The main product will be steel auto axles the delivery of which will begin by June 1 of next year. Gearings and other auto parts also will be made. A four-story concrete building will be erected. Prominent in the organization of the company are: E. E. Keller, formerly vice-president of the Westinghouse Machine Co., and J. H. Hunter, W. F. Evans, formerly of the Westinghouse Co.; H. L. Baton, Pittsburg, and E. E. Arnold, of Buffalo. Mr. Keller is president; Mr. Barton, vice-president, and Mr. Evans, manager of the axle works.

Will Build Large Body Factory.—The Yeomans Body Box Co. will build at Fort and 23d Streets, Detroit, one of the largest body factories in Michigan. The new plant will be four stories eventually, but only two at first. A special portion of the building will be assigned to the production of wood and steel bodies. About 150 men will be employed. The output will be 100 bodies a day to start with. The plant it is expected will be in running order about January 15. The reorganization of the company was effected through the bringing into the concern of Alfred Fritzsche, of Cleveland, and John C. Lombard, of Cheybogan, the former taking the office of vice-president and the latter becoming a director. Arthur Yeomans is president and Fred H. H. Yeomans, secretary-treasurer. The capital stock has been increased from $75,000 to $150,000.

Handsome Salesrooms for Anderson Carriage Co.—One of the handsomest automobile salesrooms on Michigan Avenue, Chicago, is to be erected at once for the Anderson Carriage Co., of Detroit, which has made a 15-year lease with Bryan Lathrop. It will be two stories in height with white enameled front and green trimmings, the whole to cost $40,000.

Large Output of Popular-Priced Motors.—The moderate-priced automobile will be thrown on the market in such large numbers in 1910 that, it is prophesied, it will be within the reach of every man of small means who needs an auto in his business. More than 115,000 autos that will sell for $1,000 or less will be placed on sale as rapidly as the factories can turn them out. The high-wheeled buggy autos are finding their best market in the West, where the roads are too rough for the consistent use of the regular motor cars.

New Vice-President for General Motors.—W. J. Mead, formerly of Lansing, was elected vice-president of the General Motors Co. at the meeting in New York on November 1. Mr. Mead has been living in Chicago, but will make his permanent home hereafter in Lansing, having his offices also in that city.

Trying to Interest Michigan Capital.—E. M. Clark and C. B. Richardson, both of Philadelphia, were in Owosso on November 30, trying to interest capital there in a new automobile truck factory, to be established in the Michigan town for the building of light delivery wagons. If they can get the required capital the Pennsylvanians promise to interest eastern capital to an extent sufficient to close the deal. The Owosso Improvement Asociation has the matter under consideration.

Plan to Erect Huge Factory.—The Abbott Motor Co., capitalized at $300,000, which is at present occupying the building at Champlain Street and Canton Avenue, Detroit, plans to erect a huge factory and to turn out 1,000 cars a year, representing a value of at least $1,500,000. The promoter and president of the company is Attorney Chas. S. Abbott, who has financed a number of the State's foremost commercial industries. The other officers are: F. R. Poss, first vice-president; John Phillips, second vice-president and factory superintendent; John G. Utz, treasurer and general manager, and A. T. O'Connor, secretary.

Fire Damage to Vehicle Concerns.—When the old Biddle house at Jefferson Avenue and Brush Street, Detroit, was destroyed by fire recently, the following firms suffered: Firestone Rubber Co., $16,000 to $20,000; Jackson Auto Co., $2,500; the Studebaker Co., $1,000; Detroit Tire & Repair Co., $1,000; Republic Rubber Co., $2,000; Seidler-Miner Auto Co., Cunningham Auto Co., and Pennsylvania Rubber Co., somewhere between $10,000 and $15,000.

Building Canadian Plant.—The Regal Motor Car Co., of Detroit is already excavating for its new Canadian branch plant in Walkerville, Ont., across the river. British colonial trade will be pushed. The plant will cost $100,000.

The Detroit Auto Show.—The remarkable growth of the automobile industry in Detroit will be more thoroughly impressed on Detroiters and those outside through the medium of the auto show, which will be held at the Wayne Casino in January under the auspices of the Detroit Automobile Dealers' Association. Twenty-seven new exhibitors will have on hand new models as follows: Reo, Lion, Krit, Warren, Detroit-Dearborn, Paige, Demot, Anhut, Keystone Parry, Patterson, Fuller Haynes, Thomas-Flyer, Stearns, Abbott, Palmer-Singer, Overland, Michigan, Hudson, Chase, Studebaker, Simplex, Everitt, Herreshoff, Van Dyke and White Gasoline. Not one of these cars has

Digitized by Google

been shown heretofore. The majority of the cars mentioned will be manufactured in Detroit and involve hundreds of thousands of dollars.

Maxwell-Briscoe May Build in Detroit.—It has been reported in Detroit for the last few weeks that the big Maxwell-Briscoe Co. is planning to build a large plant in Detroit, probably out on the Grand Trunk Railway line.

To Build Lamps in Detroit.—The Corcoran Lamp Co., of Cincinnati will, on March 1 next, open in Detroit an auto and carriage lamp factory.

A Nice Christmas Present.—The Detroit White Lead Works will pay total 1909 dividends of 6 per cent. on the common stock, the last 3 per cent. in December. The 3 per cent. dividends have been ordered paid on December 15, instead of in January, as a Christmas remembrance to the stockholders.

New Michigan Incorporations.—The Grand Rapids Leather Co., of Grand Rapids, has filed articles of incorporation giving its capital stock as $500,000.

The Detroit Magneto Co.; capital stock $100,000. Stockholders, F. G. Baillie, M. Fletcher, E. M. Tyler, John A. Lotz and A. A. Fletcher.

The Cadillac Iron Paint Co., of Detroit; capital stock $1,000.

The Gray Motor Co., of Detroit, has increased its capital stock from $100,000 to $250,000.

The Detroit Steering Wheel & Wind Shield Co., of Detroit; capital stock $100,000. The principal stockholder is Albert S. Keen, of Detroit.

The Templeton DuBrie Car Co., of Detroit, $150,000; to manufacture automobiles, airships and motor boats. The DuBrie patent is valued at $75,000. Stockholders are Stanley R. DuBrie, John D. Templeton and Henry J. Boerth.

The Grand Rapids Leather Co.; capital stock $100,000.

The Henry Motor Car Company, of Muskegon, capital $200,000. William L. Simonton is president, David W. Henry, general manager.

The Loeppner Automobile Truck Co., Bay City, with $1,000,000 capital, to manufacture automobile trucks.

FOREST SERVICE IN NEW LOCATION.

Preparations have been completed for the transfer of all the Government's forest products work to Madison, Wis., where the United States Forest Service Products Laboratory will be located, and to Chicago where the headquarters of the office of Wood Utilization will be established.

The new Forest Products Laboratory being erected at Madison by the University of Wisconsin, which will co-operate with the Government in its forest products work and which is to cost approximately $50,000, is now in the course of construction. The building is expected to be ready for occupancy upon January 1. In the meanwhile temporary offices will be located at 1610 Adams Street, Madison.

On October 1 the Yale Timber Testing Laboratory was discontinued and the Forest Service equipment there shipped to Madison. The Timber Testing Laboratory at Purdue, Ind., will be operated until the middle of December when it will be discontinued and its equipment shipped to Madison. The offices having gained general supervision over all the work of the branch of products will remain temporarily at Washington.

W. L. Hall, assistant forester, continues in charge of Branch of Products, and McGarvey Cline will be director of the Madison Laboratory. The work of the laboratory will be assigned to five offices as follows:

Wood Preservation, which will study all problems related to the impregnation of wood with preservatives and other substances.

Wood Chemistry, which will handle all work bearing on the chemical utilization of forest products. Wood distillation, paper pulp and other fiber products, chemical analysis of creosotes, turpentines, etc.. are the principal lines handled by this office.

Timber Tests, which will have charge of all tests to determine the strength and other mechanical properties of different woods.

Technology, which will study the microscopic structure of wood, methods of seasoning and drying it, and other problems of a purely technical character.

Maintenance, which will have charge of the filing and computing. It will also be responsible for the purchase of supplies and general care of the entire laboratory.

The class of work in the laboratory may be separated into three kinds, as follows:

The investigation of problems in experimental research.

Experimental work in co-operation with commercial plants to verify laboratory experiments on a commercial scale.

Co-operation with outside parties for the purpose of assisting them in applying principals and processes of recognized commercial value with which the service is thoroughly familiar.

The work of the office of wood utilization at Chicago will consist of studies of the wood-using industries of various States, the study of woods in manufacture and of the methods of disposing of mill waste, the collection of statistics on the price of lumber at the mill and at the principal distributing markets of the country, and the study of specifications and grading rules. The office will also secure statistics of forest products of importance to the experimental work of the service and the study of the movements of lumber and of the conditions of the principal lumber markets.

A LARGE AND IMPORTANT INDUSTRY.

The business of manufacturing articles from leather is the largest and most important in the United States, declares the Review of Reviews, and it summarizes the situation as follows: The production and manufacture of leather is a very big business all over the world. In the United States the traffic in raw leather alone ranks third in the commercial enterprises that engage the attention of the people. If one considers, however, in addition to leather as raw material the details of the different articles manufactured from it and base a calculation upon the number of people employed and the variety of operations, the business of manufacturing articles from leather is the largest and most important in the United States. Despite this fact, the inquirer after facts concerning leather is amazed to find how little has been written on the subject. This seems the more surprising, since it is of leather that are made so many articles absolutely necessary for the modern American's everyday use and comfort.

To name these seems quite superfluous, almost to the point of requiring an apology for so doing. Perhaps for this reason so little is in print about the substance of which are made our shoes and almost all our gloves and with which our hats are lined, that in the very belting of the factories themselves turns the wheels that make these products, the substance that supplies the harness for our horses and makes up such a large proportion of the carriages and wagons these horses pull, as well as of the automobiles that are fast superseding the patient beasts, the substance that makes our good trunks and bags, our pocket wallets, the exquisite covers of our fine books, and the seats and backs of our costliest furniture, as well as supplies the essential portion of the war drums of the world and the drinking receptacles for many millions of Africans and Asiatics.

CLOSED CARS IN DEMAND.

With the approach of the winter season practically all the big operators along automobile row are making provision for the anticipated big demand for closed cars. Not all, however, will be able to obtain the number necessary and many owners of open touring cars will have to get along the best way possible.

Digitized by Google

REGISTRATION OF TRADE-MARKS.

Species of Blackmail Practiced Abroad on American Exporters—Report of Recent Commissioner of Patents.

The person who first uses in this country any lawful trade-mark in connection with goods of a given kind has exclusive right to continue the use of it, and he may prevent all other persons from using the same trade-mark on the same kind of goods, or from using any mark which the ordinary buyer would be likely to mistake for that belonging to the first user. If a person who had no right to use it should register it as his own, this fact would confer no right upon him. When it is desired to establish the date at which the use of the mark began the registry of the trade-mark in the Patent Office is useful, because it will show that the person who registered the mark was using it at least as early as the date of registration. His opponent, even though he had the same design in use before that time, may have some difficulty in establishing that fact by satisfactory proof.

In a great many foreign countries title and exclusive right to a trade-mark depends upon priority of registration, and not upon first adoption and use. Many American firms have discovered this to their great cost. The daily press and trade journals have recently published many instances in which American firms have suffered from a most pernicious form of blackmail in Cuba and Japan, and the consular reports from other foreign countries are full of warnings to American manufacturers to register their trade-marks in all foreign countries in which they are doing business.

In a report of a recent commissioner of patents this matter was carefully considered and the following quotation may be of interest:

"The importance of having trade-marks protected abroad, and in many countries registration is necessary to protection, has been forcibly impressed upon American manufacturers who, sending their goods into some foreign country, have found the very trade-mark which has become valuable to them registered in that country by some citizen of that country who made application for registration for no other purpose than to enable him to demand of the American manufacturer a price for the right to sell goods marked with that trade-mark in that country. As in a number of European countries registration of a trade-mark is attributive of property in such mark and is granted not to the first adopter and user of the mark, but to the first applicant for registration, and as in these countries the registrant under the laws there in force can forbid the importation of goods marked with the trade-mark registered by him or even compel the seizure of such goods, it is evident that such registrant has the manufacturer at his mercy so far as trade in that country is concerned."

As an instance of how the scheme has been worked in Germany Consul-General Frank H. Mason, Berlin, says:

"It appears necessary to recall the attention of American exporters to a very peculiar provision of the German law for the registration of trade-marks, which is not infrequently used to the great and unjust disadvantage of American and other foreigners. Under the German statute any person may register and secure right to any name or other device used as a trade-mark which has not previously been registered here by some other firm or person. In other words, the officials before whom the application is brought make no inquiry to ascertain whether the applicant has ever used the proposed trade-mark or has any right to it, but simply look over the record to ascertain whether it has been registered in Germany. If not, it is admitted to registration without further inquiry or delay.

"The readiness with which such a practice can be abused is apparent. When, years ago, American bicycles began to be imported into Germany, certain persons interested in blocking the trade got the trade-marks of two or three makers registered in their own names, and either obliged the legitimate American owners of the trade-marks to buy them off—in other words, to pay a species of blackmail—or to change the marks on all bicycles exported to Germany.

"In a recent case the trade-mark on a special brand of American preserved fruit was registered by an outsider so that the real owner had to buy from the usurper the right to use his own trade-mark in this country.

"This abuse has become so notorious that a leading patent attorney of Berlin, writing in a recent number of the Technische Rundschau, says of the law that its effect is to legalize and facilitate the theft of a trade-mark.

"The obvious suggestion to all American exporters is that before exporting or seeking to export to Germany any kind of merchandise covered by a well-known name, they should have such name or trade-mark duly registered in this country, where all such rights are carefully protected and prosecutions for infringements easy and effective."

This form of blackmail has been carried on in other European countries. The foregoing information comes from Davis & Davis, a New York and Washington patent firm.

WOULD LIGHT ALL VEHICLES.

In fighting strenuously against the passage of universal lighting laws, farmers and other users of horse-drawn vehicles do so in the face of what is either a knowledge or a suspicion that they are standing in their own light. They know that lights are needed and should be carried for their own protection, says Auto Topics. They know, also, that only a fair trial of the new plan is needed to bring home the conviction that it is a real blessing.

They are actuated, however, by a disinclination to accept willingly anything that savors of progressiveness and also by a feeling one's face" at any cost. When the bill finally becomes a strongly supported by users of motor vehicles. The two combine to lead them to oppose the new order of things and to fight tooth and nail against the passage of such a measure. It was almost as if they were adopting the oriental policy of "saving one's face" at any cost. Whe nthe bill finally becomes a law, however, many of its opponents are just as well satisfied to have their efforts end in failure.

In New Jersey the use of lamps of some kind on horse-drawn vehicles has already become a common occurrence, for that State now has a light law. As a result, their users find them to be a safety appliance of undoubted value.

Darkness may descend upon the roads, but the blacker and gloomier it becomes the more plainly the light is seen. It matters not how small it is, or how little candlepower it may posseess, the illumination is there and is perceptible from afar. Other users of the road, even in swiftly moving automobiles, know that some object is in front and it becomes a matter almost of instinct to give heed to it.

"WEDDING HORSES."

An old fashioned man who wanted to hire a team for the afternoon saw a nice pair of bays which he thought he would like to drive.

"Can't let you have them," said the liveryman. "They are wedding horses."

"What's that?" asked the innocent pleasure seeker.

"Horses that won't shy at old shoes and showers of rice. Some horses seem prejudiced against matrimony. Anyhow they lose their temper if they happen to be hit by any of the good luck emblems that are fired after a bridal couple, and run away if they get half a chance. Every livery stable, however, keeps two or more horses who take a more cheerful view of the wedded state. They may be literally pelted with old shoes without resenting it. Those bays are that kind. They are slated to head a wedding procession to-night and are resting up for the job."—New York Sun.

Digitized by Google

SOME VALUABLE POINTERS ON BIDDING.

A small but progressive leather goods manufacturer with only limited experience in grading leather, being ambitious to increase his business and keep his help employed, made a bid on a large contract for check lines, blind bridles, chain piping, breeching, etc.

The purchaser, in buying, reserved the right in the contract to buy only such items from each manufacturer as were the most advantageous to him; in other words, he reserved the right to buy check lines from the lowest bidder, blind bridles from another factory, if they were lower, etc. The manufacturer in question, bidding on the entire lot figured to get the entire bill, use up all of his leather and make an average profit (on the old standard plan of 20 per cent estimating) of 5 per cent. When the bids were opened he was awarded the contract for the 100 dozen pair of check lines only, says Hide and Leather. The second and third cut stock articles being awarded to another factory, who figured on a different basis, and balanced his leather. He is now trying to figure out what hit him.

As he was awarded the contract to furnish the lines only, which took his No. 1 stock only, he found himself in about the following condition, viz.: That in order to be able to furnish the lines he must purchase about one-half car, or 55 rolls, of leather, weighing 185 pounds to the roll, a total of 10,175 pounds, as there is but 40 to 42 per cent of check line No. 1 stock in a hide of leather.

These 55 rolls of leather, weighing 185 pounds each, at 36 cents per pound, he found cost him $3,663 (without freight). Now his 100 dozen pair of 1¼-14 check lines weighed 42 pounds to the dozen, a total of 4,200 pounds, which at 36 cents per pound brought him $1,512. To this he added the regular advance of 20 per cent for waste and grade, making an addition of $302.40, being a safe standard and estimate as he understood. A total valuation for leather in his check lines as an estimated basis for cost of leather in the job was $1,814.40. Now, after cutting his lines and making no allowance for waste, he finds that he has actually about 58 per cent of his leather left on hand, or 5,975 pounds left of scraps, heads, necks and bellies, which cost him a total of $1,848.60, according to his estimate, the leavings costing him in this case about 31 cents per pound, which is considerably more than they are worth in the market. Taking his profit of $90.70 into consideration, his leavings would still cost him about 30 cents per pound, which is still more than they are worth in the open market.

In telling his troubles to an older and more experienced manufacturer in grading leather in jobs, his friend advised him never to take a large order for all No. 1 stock unless he had a place where he could use the scraps, necks, bellies, etc., to an advantage on another job, as there is nearly always an accumulation of second and third cut stock and scrap around every factory, a portion of which is often sold to scrap leather buyers, or to heel stock factories at a very low price per pound.

Mistake number two was that instead of adding 20 per cent for waste and grade to his No. 1 stock he should have added at least 33 1-3 per cent, or better 40 per cent, for if he had added even 33 1-3 per cent he would have figured his lines to cost in his estimate $2,016 instead of $1,814, and his scraps, heads and bellies left then would have only cost his $1,647 (instead of $1,848.60), only a little over 27 cents per pound instead of 31 cents, which is nearer what they are actually worth in the market (at 40 per cent added the leavings would have cost over 25 cents per pound), and which is all or more than he would have had to pay for bellies, heads and scraps in the market such as he had left, were he in need of such stock to make plow bridles, breeching, chain pipe, etc., and the only proper value to place on any article is what it will bring or can be bought for in the open market, from reputable dealers under fair conditions.

Who was right, the 20 per cent man, or the 33 1-3 per cent to 40 per cent man?

JOHN H. SCHUMANN ELECTED PRESIDENT OF BANK.

John H. Schumann, president of the Moller & Schumann Co., the well-known varnish makers of Brooklyn, N. Y., has been elected president of the German Savings Bank of Brooklyn, in succession to the late Charles Naeher. He became a member of the Board of Trustees of this bank on January 13, 1875, and two years later he was elected as a member of the Finance Committee and acted as chairman of the same for the past twenty-

John H. Schumann, President Moller & Schumann.

five years. He was elected second vice-president of the bank in 1891 and first vice-president in 1892.

In 1863 Mr. Schumann and Mr. Moller organized the firm of Moller & Schumann, varnish manufacturers, with the small capital of $1,200. That firm in 1899 formed the corporation of Moller & Schumann Co., of which Mr. Schumann is president, and with his four sons and John H. Mills, he is now the sole owner. Mr. Schumann intends to take things a little easier in the new year, and will act in an advisory capacity to the firm, keeping in touch with all the progressive measures worked out by the younger generation.

He is a life member of the Brooklyn Institute or Arts and Sciences, and of the Manufacturers' Association of New York. In 1897 he was the candidate of the Citizens' Union for president of the Municipal Council. Mr. Schumann was born in Germany, but he has lived in Brooklyn since boyhood. In politics Mr. Schumann is a Republican, and he was a delegate to the city convention that nominated General Tracy for Mayor. Under Mayor Low, Mr. Schumann was a Civil Service Commissioner.

The Mason Automobile Co. will hereafter be known as the Maytag-Mason Motor Co., and its principal place of business will be DesMoines, Ia. The capital stock has been increased from $250,000 to $1,000,000, $750,000 of which is common and $250,000 preferred.

Digitized by Google

THE CARRIAGE BUILDER AND THE AUTO.

Chicago Carriage Builder Makes Some Interesting and Timely Comments.

The remarks in a New York financial review of the president of the Carriage Builders' Association at their recent convention, that "the time has come to sing the swan song of the high-class carriage builder," has brought forth the following interesting statement from a prominent Chicago carriage builder, who says:

"I recall to mind those whom I met at the first convention I attended in 1876 at the Centennial Exposition and the few left at the last one I attended at the Columbus Exposition in 1893.

"To say that the high-class carriage industry is dead is as absurd to the minds of patrons of our art as that Rome is dead, because of the substitution of the many motor powers for the horse. On the contrary, cultured carriage connoiseurs will want what dictionaries define as 'automobile carriages,' rather than motor cars, possessing beauty and utility, both of which are lacking in modern motor vehicles excepting those electrically propelled.

"The change of propelling power in the hands of those conservative carriage constructors would have resulted in the production of automobile carriages commensurate with the possibilities of the new propelling power. Instead of wasting their time trying to develop 100 horsepower engines for road use that would run 100 miles an hour would undoubtedly have expended their energies in simplifying and perfecting the mechanism of their motors and transmission of power with the aim ever in mind to conserve the comfort, convenience and love of elegance, style and finish by connoiseurs in the vehicular art as has been achieved in horse-drawn carriages.

"Artizans are not artists, neither are machinists carriage mechanics, while the carriage maker must be trained to design as well as to draw; any draftsman can combine lines, but only an architectural genius can compose harmony of lines, of colors in wood or paint or fabrics and select suitable mountings and fit materials for the many uses and occasions contemplated by carriage customers' wants.

"Patrons of the art demand many types of carriages, and a reasonable amount of propelling power would admit of a fair price for the horse substitute and permit of the purchaser possessing such kinds of carriages as are suitable for his needs. Instead of seven-passenger touring cars or limousines to carry two, the usual number traveling together, the great cost of complicated power motors and mechanical transmission would have been reduced so that the auto car could have been built along lines contemplating the customer's wants as expressed in the multitudinous kinds of horse-drawn carriages so pleasing and popular to the patrons of the art.

"Knowledge of conditions both past and present warrant one in saying that the automobile carriage industry depends for its future develoment upo ncoming geniuses in the art as taught by the study of ancient Assyrian and Egyptian carriage construction down to the scientific summary and artistic attainment acquired since the invention of steel springs during the last century and the belief prevails that this is an opportune time to endeavor to educate the carriage customer, that the motor manufacturer and machinist's position in the automobile carriage begins with the purchase of materials from the manufacturer of metals, of timber, of fabrics and paint, and terminates with the transmission of power to the vehicle.

"A few instances will suffice of the lack of mechanical and artistic ability acquired by the machinist and motor makers who try to turn out high-class auto carriages whose lack of knowledge of the fundamental principles underlying carriage construction (which is only overcome by the adoption of the rubber tires) is expressed by the wheelwright in shape, strength and style of hub and spoke and rim; the axle maker, in spring suspension and carriage connoisseur that the adaptation of a naked channel iron frame by the best builders of motor carriages as a substitute for perch and body loops or pump handles, is contemporary with the agricultural implement age and the adaptation of the touring body and limousine to modern wants of the riding public is about as appropriate as the jump-seat body of our forefathers.

"That the world on wheels affords the best outward expression of advanced civilization, culture and refinement in taste among the useful and beautiful arts, giving rest, recreation and health to its devotees, admits of no doubt. That the automobile carriage has not passed beyond the machine-shop stage of development is also apparent to any carriage connoisseur. Ages before even the name of the engineer was known to men the carriage constructor conceived and constructed carriages to please the patrons of the art."

GOODYEAR TIRE & RUBBER COMPANY MAKES A DEAL.

The Goodyear Tire & Rubber Company, who for the past two years have given much attention to the demountable and detachable rims have, as a result, secured control of the American rights of the Doolittle demountable rims after seeing them exhibited at the leading automobile shows last winter.

Any car can be equipped with Doolittle rims in a few hours, using the old wheels, felloes, casings and tubes. In the event of a puncture or blowout it is merely necessary to expand the rim with damaged tire and replace same with spare rim carrytire fully inflated and ready for use. In the event of a second puncture the rim is contracted a full inch and a quarter, when flange ring is easily removed and tire (casing and tube) comes off without exertion. This does away with stretching tires, which does so much damage to the fabric.

REBUILDING BUCKEYE RUBBER CO. PLANT.

Work on a new factory building at the plant of the Buckeye Rubber Co. at Akron, O., has been begun. It will be one story high, 208x62 feet. Its location will be alongside the structure partly destroyed by fire last summer, which is now being rebuilt. The object of the new building is to enable the company to increase its output of pneumatic tires. These are marketed by the Consolidated Tire & Rubber Co. under the name "Kelly-Springfield." The addition will not affect the output of solid tires. When completed the new building will be equipped with four or five tire hydraulic presses to equip a vulcanizing department. The rest of the space will be used as a machine shop and considerable new equipment is to be purchased for this department.

THE PRICE OF TIRES.

Mr. A. J. Wills, assistant sales manager of The B. F. Goodrich Co., says that no increase in the price of automobile tires has been decided upon, but that if the price of rubber stays up, the increase will undoubtedly come. He looks for no substantial relief in the rubber market. Mr. W. B. Miller, secretary of The Diamond Rubber Co., says no increase is contemplated, and Mr. H. S. Firestone, president of the Firestone Tire & Rubber Co., says he knows of no intention to raise prices within the next two months.

THE 1910 OUTPUT 135,000 AUTOS.

"About 135,000 new cars for next year will be the output," said a tire manufacturer in an interview recently. "This estimate we have not based upon the published claims of the makers, but upon the specifications of their purchasing departments. Car makers are not prone to buy more tires for their new cars than they must have, and I believe these figures will be found very conservative, more likely below the mark than above it."

Digitized by Google

AEROPLANE LEATHER ON THE MARKET.

New Trade Possibilities for the Leather Goods Manufacturer Covers a Large Range.

A new trade field is opening to the leather goods maker. Aviation accessories will now be added to automobile goods and the use of leather in the new sport promises to be a conspicuous feature of aerial outfits. The range of adaptability is even greater if one may judge by present fashions, which although as yet somewhat tentative, are being brought to the public notice through several enterprising retailers.

Just why leather should be adopted for clothing to wear in the air can perhaps be explained better by the aviator. At any rate, some outfitters are offering complete suits of this material and it is presumed the skins of animals afford a greater protection against the atmospheric conditions aloft. These leather costumes made their appearance in London recently, designed and introduced by a prominent tailoring firm. A New York house is also offering similar garments made of cravenetted twill. The announcement in the daily press seems rather odd considering the number of New Yorkers who are flying just now, but its advertising value doubtless compensated for the necessarily small returns. The advertisement is interesting and also explains in a measure the reason for using leather. The introduction follows:

"Everything for the Aviator—but the Flying Machine.

"We were first in the field with auto apparel of practical worth; so, too, are we first to present ready-for-service garments designed to meet the special requirements of the aviator.

"The conquest of the air is now an established fact, and with the development of aviation as a practical means of locomotion, comes also the need for garments of special design.

"Upper air currents are chilly. The cold is intensified by the rush of the machine; warmth, therefore, is of primary importance in the production of garments for the aviator. But as every ounce of weight must be taken into consideration warmth with lightness is a most necessary factor."

That aviation is as yet reserved for the wealthy is evidenced by the prices quoted. "Three-garment suits for men and women, $75 to $90," is the modest statement of value.

The aerial costume is of sheepskin in dull raisin red, though of course any other color could be chosen.

The costume shown in New York is from Paris and the suit is in three parts consisting of coat, trousers and cap. There appears to be no sex differention in the outfit.

Commenting on the use of leather for clothes, a prominent leather journal says:

"It is not unusual for tanners to go up in the air, so to speak, once in a while, and now they will have opportunity to see leather go up in the air. But heaven help the leather trade if aeroplane leather becomes popular. Fortunately, it is likely to be some time before flying becomes cheap enough for the people at large, and those who soar can afford to wear shabby clothes, where they will be out of sight and not in evidence to the public, as are people in automobiles, who have to stay on earth and be stared at and fined for speeding.

"And yet we must not talk recklessly. When the 'devil wagons' were first placed before a doubting public few men were brave enough to predict their present popularity, or to forecast the amount of leather which would be demanded by the automobile industry.

"We suppose that some enterprising leather manufacturer will get ahead of sleepy competitors in advertising 'Kite Kid,' or 'Himalaya Calf,' or something else significant of great height. Meanwhile we commend 'Condor Kid' as a suitable name for leather equipment for those who go through the air in ships."

For the present the use of leather will be confined to wearing apparel, says Trunks, Leather Goods and Umbrellas, since aerial tours have not yet been tried, even by the most intrepid aeronauts. Still the time is not far distant when accessories to the flying outfit will be required, and then the leather goods maker will be called upon to produce various articles of convenience and comfort as he is now doing for the automobile world.

The desideratum of aerial baggage and leather novelties will be lightness. Strength will be subservient to minimum weight. In this the maker will find abundant field for ingenuity and novelty. Consideration of aeroplane accessories may be premature, but we live in a great age of progress and in a few years such goods will probably be listed as commonly as automobile goods of the present day.

Although the leather goods maker has apparently taken advantage of trade possibilities in the ever increasing sport of motoring, there are yet opportunities for enterprising concerns to specialize more extensively on such lines and create new articles for the greater convenience and comfort of the automobilist.

SWINEHART COMPANY'S NEW FACTORY.

The new pneumatic tire factory of the Swinehart Clincher Tire & Rubber Co., at Akron, O., will be ready for equipment with machinery early in December. The building is two stories high, 62x150 feet. In it will be installed a new engine, three rubber mills, one calender and three hydraulic vulcanizers for pneumatic tires. The capacity will be 100 pneumatic tires per day. The standard types of automobile clincher and quick detachable tires will be made. Experiments are also being made on a new type of patent automobile pneumatic tire, but officers of the company say that it will not be ready to manufacture before the middle of the next season.

ADOPT NEW BEVEL GEAR SHAFT DEVICE.

The most radical departure that has occurred in electric motor car construction in many years is the adoption of a bevel gear shaft drive by the Baker Motor Vehicle Company. Nearly all the gasoline car manufacturers have abandoned chains in favor of the bevel shaft drive on account of its efficiency, simplicity of constructionand protection against dirt.

The mechanical efficiency of the shaft drive heretofore in use, however, was not equal to that of the well-designed chain drive, and since efficiency is of the utmost importance in electric cars, because of the limited amount of power secured on one charge, it has not heretofore been deemed practical to use the shaft drive on electrics. The Baker Company has used the bevel gear with success on its larger type of cars, but has only succeeded after many years of experimenting in perfecting an improved bevel gear shaft drive which is suitable for small cars, and this will be used on its 1910 models.

ANNUAL CONVENTION OF VIRGINIA AND NORTH CAROLINA ASSOCIATION.

The Virginia and North Carolina Retail Implement, Machinery and Vehicle Dealers' Association held its first annual convention at Petersburg, Va., November 17 and 18. Addresses were delivered by A. B. Farquhar, of York, Pa.; W. K. Bache, of Richmond, Va., an dothers. Norfolk, Va., was selected as the next meeting place and the time set for November 18 and 19, 1910. The following officers were elected: J. D. Barkley, president, Lawrenceville, Va.; G. P. Peterson, first vice-president, Petersburg, Va.; J. P. Wyatt, second vice-president, Raleigh, N. C.; G. B. Todd, third vice-president, Norfolk, Va.; secretary and treasurer, L. R. Spencer, Richmond, Va.

Eugene Josenhans, a Spaniard, has invented a device for doing away with the dust trouble. It is a metal covering for wheels to take the place of mud guards. The device covers the wheels almost to the ground, and the dust that enters is dampened with a spray of water, preventing its rising in the air.

Digitized by Google

NEW SCHOOL FOR VEHICLE DRAFTSMEN.

A Novel Departure by Y. M. C. A. Has Been Inaugurated at Springfield, Mass.

The Y. M. C. A., of Springfield, Mass., has inaugurated a special course which began on November 12 in automobile and body drafting. R. B. Birge and Messrs. Sargent and Curtis, all graduates of the C. B. N. A. Technical School for Carriage Draftsmen, in New York, are interested in the undertaking, and the two first-named gentlemen will personally instruct the class.

The class itself consists of a number of the most ambitious and intelligent young men in the Springfield vehicle industry, and the bare fact that they are willing to give their spare time to the widening of their knowledge in the higher branches of vehicle manufacture evidences their enthusiasm for the work in which they are engaged, and furnishes a prophecy of their future success.

The two instructors are exceptionally competent for their positions. Mr. Sargent has had wide experience in both the carriage and automobile branches of the vehicle business. He has been a valued employe of such concerns as Brewster & Co., in New York, and J. M. Quinby, Newark, N. J. At the present time he is holding a position as foreman with the Springfield Metal Body Co.

Mr. Birge has had an equally extensive acquaintance with the carriage and motor car industry, and is a Technical School graduate. For the past several years he has had charge of the drafting department of the Springfield Metal Body Co.'s plant.

There is no reason why a school modeled on the Springfield lines should not be inaugurated in many other of our cities, and it may be that the initiative of the Massachusetts school will lead to the establishment of a new system of technical classes for American carriage and automobile body builders.

PERSONAL MENTION.

C, H. Solanus, of New Orleans, is now with the Tennessee Harness Co.

B. J. Grant, formerly superintendent of the axle department of the Salisbury Wheel & Mfg. Co., has joined the Lewis Spring & Axle Co. in a similar capacity.

William Goodes, of Flint, Mich., was elected president of the Michigan Retail Implement and Vehicle Dealers' Association. All the previous officers were re-elected.

Morton T. Jones, for 14 years connected with Kirk-Latty Mfg. Co., of Cleveland, O., has resigned as secretary of that company to become secretary and general manager of sales of the Foster Bolt & Nut Manufacturing Co., of Cleveland.

After being in the carriage-making business 52 years, James Y. Randall, of Newton, Pa., has retired.

Mr. Claude W. Moody, formerly with the Pennsylvania Rubber Co. (Jeannette, Pa.), has been employed as sales manager by the Swinehart Company. To facilitate the distribution of their product the company established during the latter part of November agencies in Washington, Boston and Buffalo, and others are to be placed in Philadelphia and Indianapolis. "We already have sufficient orders," said Mr. W. W. Wuchter, manager of the company, "to take care of our 1910 output."

Ollie C. Root, who has been in the employ of the Kentucky Wagon Manufacturing Company, of Louisville, Ky., since its organization in the '80's, resigned his position as traveling salesman for that company November 30 to accept a similar position with the Rock Island Plow Company, of Rock Island, Ill.

CREDITORS TO REOPEN PLANT.

It is understood that the plant of the Becker Wagon Works, Evansville, Ind., will be reopened and operated on a bigger scale by the creditors who took it over at the recent public sale.

Among the Manufacturers

Will Manufacture Roller-Bearing Axles.—The Patent Holding &Mfg. Co., of Spokane, Wash., has purchased the plant of the Diamond Carriage Co., 118 Second Avenue, for the manufacture of a roller-bearing axle.

New Branch Factory.—The Mutual Wheel Co., of Moline, Ill., is erecting a branch factory on the Banton Gravel Road at Paducab, Ky.

Wagon Works Plant Extension.—At the plant of the Lansing (Mich.) Wagon Works business is steadily increasing and a new addition, 35x40 feet, two stories high and built of cement, has just been completed and will be used for wood-working machinery. The carriage department shows the largest increase, amounting to about 20 per cent over last year and 50 per cent over two years ago. The advisability of building an extensive adition to the carriage building, which would double the capacity, is being considered. At the present time 175 men are employed and the full capacity of the plant is booked up to June 1.

Will Move to Iowa.—The Dart Manufacturing Company, of Anderson, Ind., will move to Waterloo, Ia., June 1, 1910. The company manufactures a farm auto truck which is expected to become popular with the Iowa farmers. It will have a capital stock of $250,000.

Busy at York.—The W. A. Eberly Wheel Works, York, Pa., reports an increase in business of 40 per cent over last year. Blower machinery has just arrived, which will be used in the dust-collecting system, and will be installed immediately. The company is working on full time, and has a number of orders on hand. Several carload lots of wheels and rims were shipped south recently.

Beaumont May Have New Carriage Plant.—W. C. Gray, Jr., has become the owner of the plant of the Beaumont (Tex.) Spoke & Handle Company, and has also acquired all the stock of the old Penman Iron & Steel Company, which he plans to convert into a large carriage factory, in which event a half-million-dollar company will be organized.

From Ypsilanti to Ann Arbor.—The Ferguson Buggy Company, patentees and manufacturers of mail carts designed to be used on rural delivery routes, has moved to Ann Arbor from Ypsilanti, Mich. Work has begun on a new concrete three-story building.

Sears-Roebuck Not the Buyers.—James Kauffman, secretary of the Kauffman Buggy plant, at Miamisburg, O., which has been in the hands of a receiver for several months, declares that there is absolutely no foundation to the rumor that the Sears-Roebuck Company, of Chicago, had purchased the plant, and that the company had not even made an offer. He said the plant was still in the hands of the receiver, although a number of creditors were considering its purchase.

To Build Vehicles and Flying Machines.—The Aerial Demonstration Company, of New York, capitalized at $100,000, has been incorporated.

ADDS A SALESROOM.

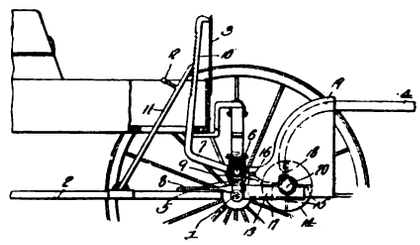
The Schildwachter Carriage Co. have opened a down-town salesroom in New York at 249-251 West 57th Street, at Broadway, in the Thoroughfare Building, where Mr. C. W. Schildwachter will have personal charge of this branch.

Digitized by Google

Recently Granted Carriage Patents

Shaft Detaching Device. Milton P. Powell, Jr., Highlandale, Miss. No. 938,890. Patented November 2, 1909.

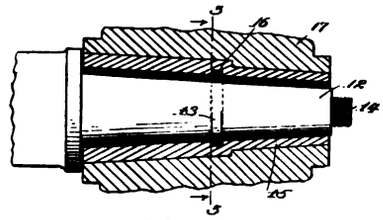
A device of the kind described comprising in combination with an axle, a revoluble, flanged and webbed drum supported from the axle, shafts, means carried by the rear ends of the shafts



for engaging an upright web of the drum, clamps adapted to engage webs lying in a horizontal plane, means for locking the clamps, and means for automatically lifting clamps out of alinement with webs when unlocked.

Hub Attaching Device. Ira S. West, Difficult, Tenn. No. 938,804. Patented November 2, 1909.

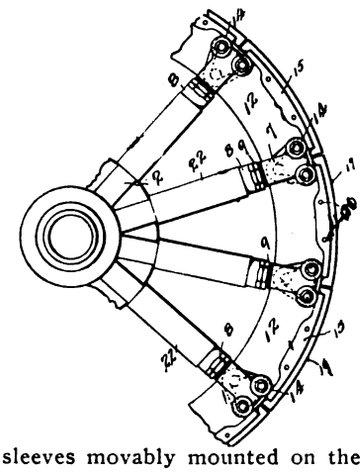
The combination with a vehicle axle provided on its lower side with one or more transverse curved ribs, of a thimble or bushing loosely fitting the axle and provided with one or more in-



terior annular grooves receiving the rib or ribs, the looseness or play between the axle and the thimble or bushing being approximately equal to the height of the rib or ribs.

Cushion Wheel. Abram Ellis, Augusta, Ga. No. 983,834. Patented November 2, 1909.

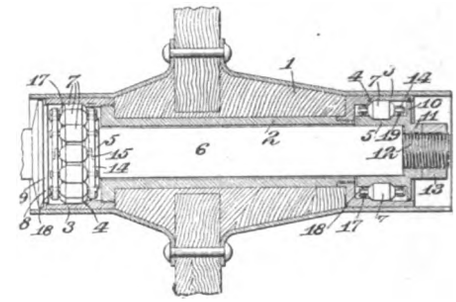
The combination with an axle, of a wheel hub rotarily ments provided with registering flared slots engaging members



of the spokes, sleeves movably mounted on the spokes and engaging the tread segments near their outer faces and springs intermediate the hub and the sleeves.

Roller Bearing. Onesime E. Michaud, St. Louis, Mo. No. 939,056. Patented November 2, 1909.

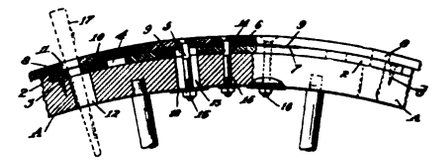
The combination with an axles, of a wheel hub rotatably mounted thereon, the hub having bearing rings in each end, and each of the bearing rings having an internal annular beveled end thrust shoulder near its inner end, an inner bearing ring sleeved on axle and in co-operative relation to the bearing ring in the inner end of hub and having a beveled end thrust shoulder diagonally opposite to the shoulder on hub bearing ring, a stop on axle adapted to bear against the outer end of axle bearing ring, a bearing ring adjustably mounted on axle endwise in co-operative relation to the bearing ring in the outer end of hub and having a beveled end thrust shoulder diagonally opposite to the shoulder on last mentioned hub bearing ring. and a series of



cylindrical rollers interposed between the bearing rings at each end of the hub in rolling contact therewith, the rollers having beveled end portions corresponding to the bevel of end thrust shoulders.

Vehicle Tire and Tightening Means Therefor. Gustave A. Krohn, Coarsegold, Cal. No. 939,037. Patented November 2, 1909.

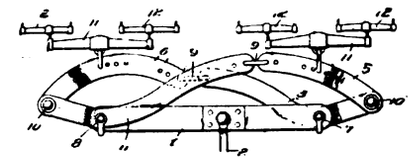
In a vehicle wheel, the combination with a felly, of a plate countersunk into the periphery thereof, said plate having slots adjacent to its ends, a tire fitting said felly and with the ends



resting on said plate, said tire having slots registrable with said slots in said plate, means for engaging said slots to draw the ends of the tire together, and means for securing the tire to the wheel.

Four-Horse Doubletree. Michael McEvoy, Neola, Ia. No. 939,534. Patented November 9, 1909.

A four-horse doubletree or draft appliance constructed substantially as set forth, the same comprising a swingletree, equalizing levers arranged upon opposite sides of the swingletree and pivotally connected to the end portions thereof to provide out-



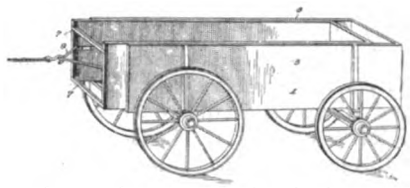
wardly extending short arms and inwardly projecting long arms having their end portions overlapping, the arms of the levers being forwardly diverged and having the end portions of the long arms rearwardly deflected, draft levers pivotally connected at their outer ends to the short arms of the respective equalizing levers and having their inner ends adjustably connected to the long arms of the opposite equalizing levers, the draft levers being longitudinally curved and arranged with their concaved edges facing rearwardly, and doubletrees adjustably connected

Digitized by Google

with the draft levers intermediate the ends of the latter and provided with swingletrees.

Wagon Bed. Charles B. Tilery, London, Ky. No. 939,758. Patented November 9, 1909.

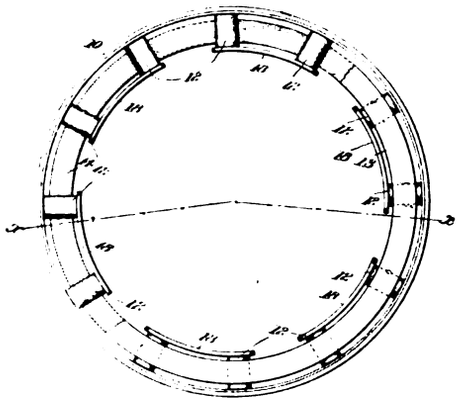
A wagon having a wagon box provided with a bottom, sides, a front end board and a removable rear end gate, in combination with an unloading frame in box, the said unloading frame com-



prising side boards nearly co-extensive in length with and disposed on the inner sides of the sides of the box and a front end board connecting such side boards together, the box being open at its rear end, and a clevis at one end of unloading frame to facilitate withdrawal thereof through the rear of the box.

Fifth Wheel. John Herby, Jamestown, N. Y. No. 939,254. Patented November 9, 1909.

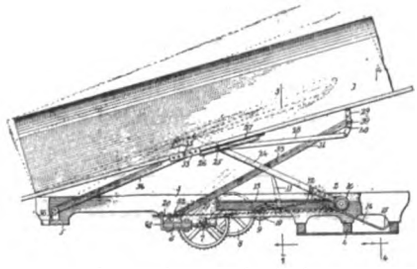
In a fifth wheel, the combination of an outside circular band or strip, a series of pins or spindles fixed thereto and projecting radially from the inner side thereof, supporting means for



the inner ends of pins, rollers loosely mounted on the pins, and ring tracks with which the rollers engage, the rollers having a diameter in excess of the width of inner supporting means whereby the ring tracks may be moved radially over the rollers and past the vertical plane of supporting means in response to irregularities in the ring tracks.

Dumping Wagon. Thomas Wright, Jersey City, N. J. No. 939,782. Patented November 9, 1909.

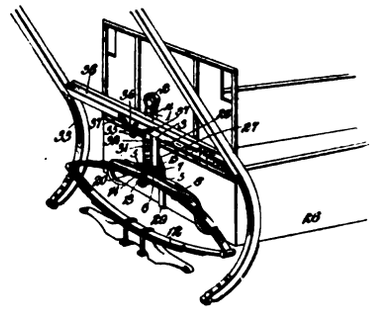
In a dumping cart or wagon, in combination, a truck, a body thereabove, guides attached to body, main legs guided at one end in the guides, means for guiding the other ends of main legs on truck, means for exerting an upward thrust in main legs, front



legs pivotally mounted on the truck, links connected with the ends of the main legs, and members connecting the links with the front legs pivotally attached to the wagon body and adapted to support the wagon body.

Buggy Shaft Support. Jeff D. McCabe, Woodbury, Tenn., assignor of one-third to Robt. Lesley Mason and one-third to Benjamin Laurence, Woodbury, Tenn. No. 939,825. Patented November 9, 1909.

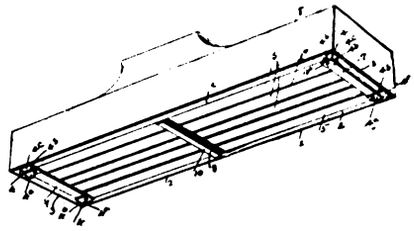
A shaft support including a standard, a catch arranged in a vertical position in front of the standard and composed of spaced sides and a connecting portion, means for securing the connecting portion to the standard, and a co-operating loop hav-



ing terminal attaching arms to be secured to the lower face of the cross bar of a pair of shafts and extending upwardly and rearwardly, the engaging portion of the loop being located above and in rear of the cross bar, whereby when the shafts are swung upward the loop will be carried between and engaged by the sides of the catch without the cross bar of the shafts coming in contact with the same.

Detachable Floor for Vehicle Bodies. William B. C. Hershey, Columbus, O. No. 940,015. Patented November 16, 1909.

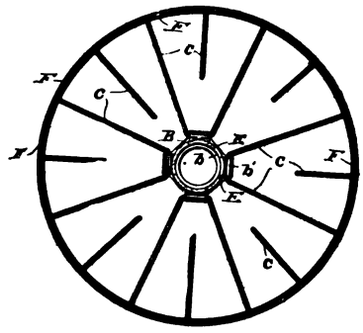
In a detachable vehicle body floor and supports therefor, the combination with the vehicle body, its side and end sills, and



corner brackets each of which comprises a member secured to the undersides of the adjoining ends of a side and end sill and further comprises a depressed integrally formed floor supporting member, of a fixed bar extending transversely between the side sills, and a floor for the vehicle body adapted to be detachably supported upon the depressed members of the corner brackets and upon transverse bar.

Metal Wheel Hub. John W. Murray, Chicago, Ill., assignor to Knox Metal Wheel Company, Knox, Ind. No. 941,029. November 23, 1909.

The combination of a felly, a tube, spokes respectively provided with bends, and combined tube and spoke engaging devices respectively arranged to engage with the tube and with

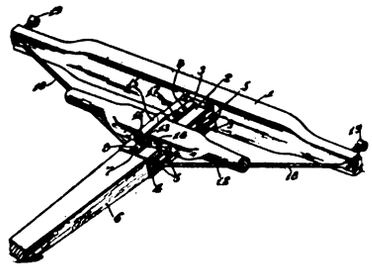


the spokes between the bends therein, each of such spoke engaging devices comprising a central tubular portion arranged to fit within the end of the tube and provided with projections having, respectively, return bends arranged to bring the ends of such projections near to contact with the peripheral surface of the tubular portion and the sides in contact with the ends of the tube, and the ends of the spokes arranged to engage with the felly.

Digitized by Google

Pole Attaching Means for Vehicles. Jeremiah G. Maloney, Scranton, Pa. No. 940,982. Patented November 23, 1909.

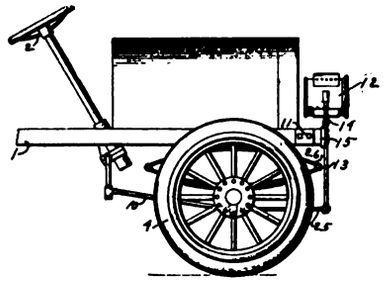
In a device of the character described, the combination with a reversible cross bar having thill eyes at its ends, a pole socket



secured to the center of cross bar and having a longitudinal offset portion, the latter made with a series of bolt openings, a doubletree, a plate secured to the doubletree and having a bolt receiving bearing or sleeve, a bolt having its head in the offset portion of the socket and projecting through the bearing or sleeve, a bar, a bolt securing the bar at its rear end to socket, and the forward end of bar having an opening to receive the first mentioned bolt, and nuts secured on both of the bolts.

Lamp Operating Mechanism. Artemus R. Warfield and Joshua B. Nicholson, Washington, D. C. No. 935,437. Patented September 29, 1909.

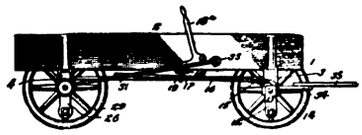
A lamp supporting member; a bracket; a three-part hinge member interposed between bracket and lamp supporting member, two of the parts of the hinge member being secured, re-



spectively, to lamp supporting member and to bracket, and the third part of the hinge member forming a connection between, and to which each of first mentioned parts are pivoted at points apart from one another; means for swinging lamp supporting member; and a spring co-operating with hinge member and acting in opposition to the motion transmitted to lamp supporting member.

Wagon. George W. Gayle, Gem, Kan. No. 940,456. Patented November 16, 1909.

A wagon having pivoted wheeled front and rear axles of crank form, brackets pivotally mounted to the axles for supporting



the wheels of the wagon, levers connected with the axles adapted for operation to move axles so that the pivot points of the wheels can be disposed above the bottom of the wagon box and allowing the axles to rest upon the surface of the ground.

THE COMING SHOW AT DETROIT.

Detroit's show will have 191 models of 58 different makes. Twenty-six of the makes are to be exhibited locally this year for the first time and of this number 15 are the product of companies which have come into existence since the last show, all being local. As several prospective exhibitors are still to be heard from, the committee reserved the right to alter allotments in the event of further entries.

ENGLAND FAVORS DETACHABLE WHEELS.

The Dunlop Tire Company, of Coventry, England, has introduced a new type of detachable wheel, and which was shown at the recent Olympia Show in London. The special advantage of this design is that any looseness or sideplay can be taken up immediately by screwing the actuating sleeve further out, whereas with most other types such looseness cannot be cured once it has been set up.

Briefly described, the device works on the simple principle of placing a doubly screwed sleeve between the internal hub, which has a left-hand thread, and the outer hub shell, which has a much coarser left-hand thread. Consequently, when the sleeve is turned in a right-hand direction by means of the spanner, it unscrews somewhat off the inner hub, and this action causes the wheel proper to be screwed up tight against the flange of the inner hub. The wheel is prevented from revolving during this operation by the studs which fit into holes in the inner hub flange.

The detachable wheel, which, in fact, is strictly a British development, has of late commanded even more attention, and its popularity in Great Britain is growing, so that even the little two-seaters is rarely seen without some device of the sort on its running board or near body. In racing, too, the detachable wheel is again to the front, and it is said that they can be changed even more quickly than the demountable rim, which enjoy great popularity on the Continent. The detachable wheel, however, seems a fixture with the Englishman who believes sincerely in its utility.

THE MOTOR SHOW IN LONDON.

The annual motor show organized by the Society of Motor Manufacturers and Traders, and which closed recently, was certainly one of the best and most successful yet held.

The manufacturers were all well represented and the many and varied designs that were exhibited provided one of the best indications as to the condition and progress of the industry generally. One of the marked features of the exhibition, and which was freely discussed on all sides, was the conspicuous absence of the racing car, which is an indication that, at shows at least, this type of machine does not command a great deal of interest. Perhaps the general impression to be gained from the exhibits was the prominence of the low-powered car, the demand for which has now been growing for some time. It was, therefore, not surprising to see the 15-horsepower model exhibited by most of the big manufacturers.

Wheels of the wire type seemed also very much in evidence, and such firms as Arrol-Johnson, Crossley, Motobloc and Sheffield-Simplex fit them to all their cars. The torpedo body, too, was another feature which just now is almost "a craze" among the English motorist, and the pioneers of it seem to be the Renault, although many British makers, such as the Deasy, Arrol-Johnson and Sheffield-Simplex, are fitting their models with these bodies. The many new exhibits on view at the show is certainly a pleasing testimony to the good work and rapid advancement made by the trade during the past year, and augurs well for the future.

WILL PAY MORE ATTENTION TO ELECTRICS.

The Studebaker Automobile Company, South Bend, Ind., which has been doing quite a large business in electric vehicles, has decided to go into this branch of the work on a larger scale, and has separated the electrical from the other parts of the work and placed C. H. Tyler, formerly with the Chicago branch, in charge. Mr. Tyler has taken hold of the work and is making every effort count in the production of electric vehicles. The headquarters of the company has been transferred from Cleveland, O., to South Bend. Hayden Eames is in charge as general manager.

Digitized by Google

Trade News From Near and Far

NEW FIRMS AND INCORPORATIONS.

The Capitol Carriage Co., of Fresno, Cal., is openinf a branch establishment in Tulare, Cal.

Newman & Estes have engaged in the vehicle and implement business in Fairview, Mo.

Pierson & Anderson have engaged in the implement and vehicle business in Axtell, Neb.

M. O. Madison & Co. are engaging in the implement and vehicle business in Wylie, Minn.

J. W. Whitt is opening an implement and vehicle business in Sweetwater, Tex.

F. W. Snyder & Co. have incorporated in Vincennes, Ind., with a capital of $15,000, to manufacture vehicles.

The Durham-Stone Co. has been incorporated in Oklahoma City, Okla., with a capital of $10,000, to handle implements and vehicles.

Rehberg & Norman have engaged in the vehicle and implement business in Bennington, Kan.

P. H. Greene has engaged in the vehicle and hardware business in Cedarville, Kan.

W. A. Rowe has opened a large vehicle repisitory in Fort Smith, Ark.

O. J. Doherty has engaged in the vehicle business in Maple Lake, Minn.

Johnson & Austin have engaged in the vehicle and implement business in Stennett, Ia.

At St. Joseph, Mo., the Avenue Carriage Works has been incorporated with a capital of $2,000.

At Evansville, Ind., the Becker Wagon Works has been incorporated with a capital of $45,000.

At Sidney, O., the Sidney Mfg. Co., manufacturers of buggies, has increased its capital from $40,000 to $75,000.

Roger S. Spaulding has established a wagon making and repair shop at Montrose, Pa.

At Cleveland, O., the Ranch & Lang Carriage Co. has incorporated with a capital stock frmom $25,000 to $1,000,000.

The Lewis Spring & Axle Co., of Jackson, Mich., has increased its capital stock to $350,000.

James O. Sutton has opened a carriage and automobile paint shop at Kingston, N. Y.

A corporation under the style of George J. Arnold & Co. has been organized to engage in the business of manufacturing vehicles, etc. The capital stock is $25,000.

The Beyster Detroit Motor Co., of Detroit, Mich., has been incorporated with a capital of $50,000 to engage in the manufacture of motor cars.

The Brodesser Motor Truck Co., Milwaukee, Wis., has been incorporated. Capital $125,000.

The Rogers Motor Car Co., Ralston, Neb., has been formed with a capital of $250,000.

The Union Motor Truck Co., Duluth, Minn., has incorporated to manufacture motors and vehicles of all kind. Capital stock $50,000.

The Consolidated Manufacturing Co., of Toledo, O., has been incorporated to manufacture automobiles. Capital, $225,000.

A new firm styled the Mishawaka Carriage & Trimming Company has been located at Mishawaka, Ind.

The Parts Company has been formed to manufacture automobile parts with a capital stock of $1,000. It is an Illinois corporation located at Chicago.

The Auto Wheel Co., of Lansing, Mich., has been organized with a capital of $150,000 to acquire the plant of the Lansing Spoke Co. New buildings are to be erected.

BUSINESS CHANGES.

W. C. Gray has purchased the entire plant of the Beaumont (Tex.) Spoke & Handle Factory, and he states that he purposes putting the plant in operation.

H. H. Perlstein bought the stock of the Beaumont (Tex.) Carriage Co. at receiver's sale for $5,850. The stock was inventoried at a little more than $10,000.

The Blimline Wagon Works at Sinking Springs, Pa., were sold to Elias Holtzman for $4,010. The sale included a fine three-story stone residence. Mr. Holtzman will convert the plant into an auto works.

H. C. Lawrence has purchased the stock of vehicles, etc., of Henry Purrier in Guinnison, Colo.

Abernathy Bros. have succeeded the L. A. Fitch Co. in the vehicle business in Monte Vista, Colo.

Parvin Bros. & Co. have sold their hardware and vehicle business in Burrton, Kan., to Austin & Gilson.

W. R. Booth has disposed of his stock of buggies, etc., in Dallas, Neb., to C. N. Wolf & Co.

Frank Leach has purchased the stock of vehicles, etc., of G. W. Smith in Creston, Neb.

Arthur Weckworth has purchased the stock of buggies, etc., of A. C. Leizler in Brantford, Kan.

Istone Bros. have purchased the stock of vehicles, etc., of Walsh & Petty in Grand Ledge, Mich.

E. C. Knight has disposed of his vehicle and implement business in Red Oak, Ia., to Geo. C. Boileau.

Ricker & Co. have succeeded to the vehicle and implement business of Ricker & Landes in Yates Center, Kan.

George Boyd has purchased the hardware and buggy business of B. B. Gold in Dwight, Kan. Mr. Gold moved to Colorado.

J. W. Whitness has purchased the vehicle and implement business of H. DeGraw & Co. in Brookfield, Mo.

W. B. Roe has purchased the stock of vehicles of F. Tripe & Co. in Stamford, Neb.

J. Hastings has disposed of his stock of vehicles, etc., in Osceola, Neb., by H. B. Russ.

J. C. Cleppart has purchased the stock o fvehicles, etc., of H. C. Truax in Yellow Springs, O.

Frank Atkinson has purchased the vehicle business of Clarence Hanenkrat in Tillamook, Ore.

DeWild & Cook have sold out their vehicle and harness business in Iowa Falls, Ia., to F. C. Carrick, of Traer, Ia.

The Jayce—Pruitt Co. has purchased the vehicle and hardware business of E. E. Maddox in Artesia, N. M.

Giedd & Eggert have purchased the vehicle business of F. J. Eggert in Tripp, S. D.

W. W. Hasbrouck has sold his vehicle and implement business in Oelwein, Ia., to A. A. Wilson.

A. R. Titus has sold out his stock of vehicles, etc., in Blairsburg, Ia., to J. J. Talcott.

Frank Leach has purchased the stock of vehicles and hardware of G. W. Smith in Creston, Neb.

Frank W. Steele has purchased the vehicle and implement business of E. L. Wilder in Lyons, Mich.

John H. Crawford, for many years a member of the Keith-Kerr Carriage Co., of Mercer, Pa., has signed articles of agreement whereby he will become the owner of the Mercer plant of the company.

Digitized by Google

BUSINESS TROUBLES.

Byron E. Inglehart, wholesale dealer in carriages and wagons at Omaha, Neb., filed a voluntary petition in bankruptcy in the United States District Court. His liabilities are scheduled at $48,314.26 and his assets at $22,544.16. At a recent meeting of the principal creditors of Inglehart an agreement was reached that C. O. Nelson, of Omaha, should be appointed receiver of the estate. The business of the bankrupt firm will be carried on under the receivership until the election or appointment of a trustee in bankruptcy of the creditors.

The French Carriage Co., Boston, one of the oldest carriage concerns in the country, was petitioned into bankruptcy on November 19, and Joseph H. Soliday has been appointed receiver. The liabilities were $50,000, with $25,000 assets.

The Indestructible Steel Wheel Co., of Lebanon, Ind., has been adjudged a bankrupt.

The Airslie Carriage Company, of Richmond, Va., has consented to go into receivers' hands on the petition of Mr. R. Burton, who is a creditor to the extent of $2,525. The petition asks for the winding up of the company's affairs.

FIRES.

The Washington Wagon & Carriage Co., of Spokane, Wash., has sustained a small fire loss.

The carriage shop of William Hill inSacramento, Cal., has been destroyed by fire.

The vehicle and harness stock of W. J. Martin in Leon, Kan., has been damaged by fire.

Fire destroyed the power plant of the R. N. Colins Vehicle Woodwork Company's establishment at St. Louis, Mo. Loss $25,000; fully insured.

Fire at Rockville, Ind., destroyed the Wilbur Harrison block occupied by the Rockville Harness, Buggy & Automobile Company, formerly C. E. Hawkins. Ioss $5,000.

E. Chope & Sons wagon works, 106-108 Randolph Street, Detroit, Mich., was damaged to the extent of $2,000 by fire. It is believed that the flames started from an overheated boiler.

Fire did about $200 damage to carriage factory of Robert Elder in Toronto, Ont., on November 18.

Fire at Lancaster, Mass., on November 13, destroyed the carriage plant of C. F. W. Turner, formerly the Wellington Carriage Carriage Factory. Loss $50,000. John O'Rourk, who conducted a wheelwright business in the shop, also sustained a loss of $500.

The carriage factory of Charles Roose at Tiro, O., was destroyed by fire November 26.

The buildings at 105-9 Coss Street, Joliet, Ill., in which the wagon-building firm of Weishar & Hummel is located, was completely gutted by fire recently. The total damage involved is estimated at $8,000. Weishar & Hummed suffered to the extent of $2,000.

IMPROVEMENTS-EXTENSIONS.

Hahn & Bro., proprietors of the Hamburg Carriage Works, Hamburg, Pa., are erecting a three-story building, 60 by 65 feet in size, which will be used for display and storage purposes. The first floor will be the repository, the second for storage, and the third for the building of racing sulkies.

The modern Carriage Co., of Pittsburg, Kan., has added a finishing room to its plant.

Among the extensive operations which have been going on in Cleveland ,O., during the present year are the large additions to the plant of the Rauch & Lang Carriage Co., makers of electric vehicles. The progress of the electric automobile is shown in the fact that this old carriage firm, with their 57 years' experience in fine carriage work, have erected more new buildings in the past four years than in all their previous history.

The Andrew Kelley Carriage Co., Bangor, Me., which have had their home at 277 Main Street since its foundation 40 years ago, have moved into a new location on Walter Street. One of the reasons for the need of larger quarters is that the firm has decided to add an automobile repair shop to the activities of the concern.

Owing to growth of business Chas. Will, manufacturer of spring wagons and floats in New Orleans, moved his place of business to 1050-1058 Magazine Street.

The Mitchell & Lewis Wagon Company is building a new addition to their large warehouse, corner of Center and Eighth Streets, Racine, Wis.

Johnson Bros. & Saunders are building an annex to their vehicle establishment in Parker's Prairie, Minn.

Fred F. Broens, of Memphis, Tenn., has let the contract for the construction of a carriage and wagon shop.

The Lake Charles Carriage & Implement Co., of Lake Charles, La., is erecting a new warehouse.

William Claffy is remodeling his wagon shop at Carlock, Ill.

The Carolina Vehicle Co. at Hendersonville, S. C., has moved into new and better quarters.

The Broadway Vehicle Co., Riefting Bros., proprietors, has leased large quarters at 914-918 North Broadway, St. Louis.

The Winona (Minn.) Carriage Company has recently made an improvement at its plant in the installation of a hot water heater to use the exhaust steam to heat the water before it goes into the boilers.

M. T. Weisel has completed a three-story brick carriage factory in Perkasie, Pa. It's the tallest building in the town.

Downham & Cammett will erect a brick addition to their carriage shop at 616-618 Fifth Avenue South, Minneapolis, Minn. It will be 26x46 feet.

At Darlington, Ind., Frank Miles is preparing to build his wagon repair shop the full length of his lot, the new part to be occupied as a blacksmith shop.

W. H. Gaiser, of the Gaiser Carriage Works, Wichita, Kan., took out a building permit recently for the erection of a business block of his own. The structure will be of brick, two stories high and will be located at 217-219 St. Francis Avenue. It will cost $10,000. The building will be 42 by 125 feet in size and both floors will be occupied by the Gaiser Carriage Company.

OBITURAY

Charles D. Quier.

Charles D. Quier, manufacturer of buggy tops at Kansts City, Mo., died from a stroke of paralysis on November 13. aged 59 years. He was born in Allentown, Pa. A widow and two sons survive.

Charles Waugh.

Charles Waugh. well-known carriage builder of Cambridge, Mass., died November 20 from a paralytic stroke. He was born in Halifax, N. S.. about 60 years ago and came to the United States at the age of 15. He entered the business of manufacturing carriages with his brother, W. A. Waugh on Main Street. Later Mr. Waugh bought out his brother's interest. He took into partnership the father of ex-Alderman Harry Penniman. whom he later bought out and since he was sole owner of the business

Mr. Waugh employed 45 men in the manufacture of all kinds of vehicles, making a specialty of fire and police apparatus, and during recent years he added auto repairing and motor truck manufacturing to his line.

Andrew Enger.

Andrew Enger. aged 78, a pioneer buggy builder of Cincinnati. died November 19 at his home in Westwood Two sons, George and Frank J., and one daughter. Mrs. S. H. Goodin, and a brother and sister survive.

Geo. H. Brown.

Geo. H. Brown, who was for many years with Draper & Mannard, carriage builders of Plymouth, N. H., is dead. Mr. Brown was born at Salisbury (now Amesbury), Mass., on May 26, 1851. He leaves a widow and two sons.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

AUXILIARY SEATS FOR LIMOUSINES, LANDAULETS AND TOURING CARS.

One need but refer to the patent list to note that the question of the ideal auxiliary seat for the automobile body has not been solved to the satisfaction of the majority of the automobile-using public. The reason that so many different types of seats are in use and more being exploited, is because sufficient thought is not given at the commencement when the body is designed, as to the actual requirement of the customer in this matter. The customer also is very often not particularly interested until he discovers that he has an unsatisfactory article for an additional seat in his car. It is a simple matter to fit any kind of a seat

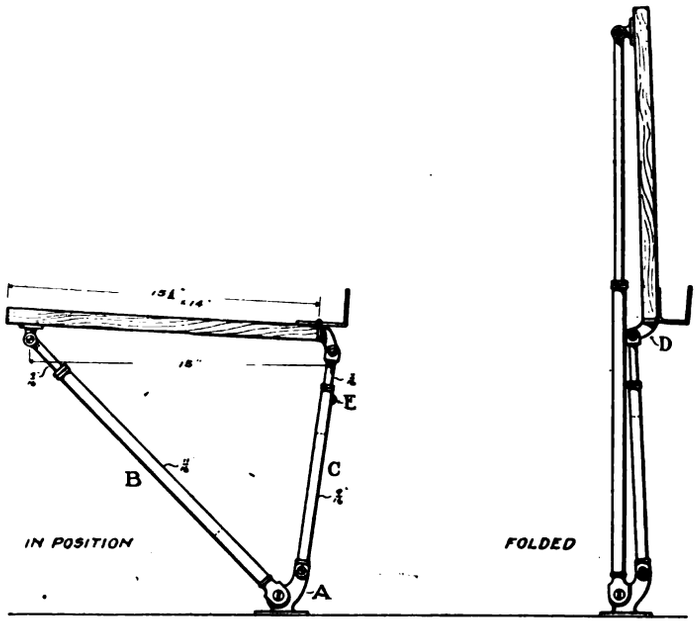


FIG. 1.

in a job, so long as it could be called a seat, since the customer failed to be explicit when ordering. One can readily see that these conditions have brought about confusion and complicity of ideas in the production of folding or auxiliary seats.

An auxiliary seat, as the name implies, is for emergency use only, but often a journey of long distance is made and the auxiliary seat used during the entire trip; therefore, the question of comfort should always be taken into consideration and a seat chosen that will give the maximum amount of back support, at the proper angle or slant, and having as comfortable a seat cushion as the space will admit of. A cane bottom is more comfortable than a stuffed seat, if the seat be very small, and allows more seating room.

The auxiliary seat may be divided into two kinds or classes, viz., those that fold against the division front, such as used in taxicabs, which compels the occupant to sit facing toward the back, and the side seat variety, that permits the occupant to face front. The latter is infinitely the best, but requires a greater amount of room in the body to permit of its use. For the former style 30 inches between the front edge of the rear seat and the division is sufficient, while for the latter seat not less than 37 inches is required. In the accompanying illustrations we show one design of the first type in Fig. 1, and three designs of the second type as shown in Figs. 2, 3 and 4. The designs here illustrated and described represent some of the best and most popular types, and also shows the advantages of a properly constructed auxiliary seat.

Fig. 1 is a French creation and is more elaborate than the majority of taxicab seats. It is possessed of one distinct advantage in that it will stay either up or down, automatically fastening itself in either position, as shown in the illustration, folded in position. The lower part A is a brass casting and is fastened with screws to the floor or to a bar; B is 18 guage brass tubing 11-16 inch outside diameter, to the bottom of which a casting is riveted to form the hinge and to the upper end a small double collar to stiffen the mouth part. Into this the upper tubing of 9-16 inch outside diameter moves freely. The dotted line on B shows the length of the upper tubing, and also the stop when seat is in position. C is a similar tubing 9-16 inch outside diameter, inside of which at its lower end is a heavy coil spring which presses against the end of the upper 7-16-inch tubing, which is fastened to the seat frame by the offset connection D. At the back of C is a slot 2 inches long, starting from the collar at the top. Through this slot a round head No. 12 machine screw is fastened to the 7-16-inch tubing, as the coil spring exerts an upward pressure, the connection D directs this pressure either back or forward of a perpendicular and, therefore, locks the seat firmly in either its upright or horizontal position, the screw E preventing the tube from being forced out of its socket. While this seat is more than ordinarily expensive to construct, it has the positive advantage of being effective in operation and very durable.

Fig. 2 represents a side seat of a smaller type. This is self-contained and can be readily removed from the car without leaving any objectionable lugs or fastenings protruding, as the bracket A shown in the side, front and bottom views, engages in a tapered keyway, as illustrated in a separate diagram, and is forged solid to the side brace of the body just back of the doorway. This illustration shows a seat for the right side of the car. Bracket A is a casting and is ribbed to secure the necessary strength, its upper end is turned and enters the crossbar of seat support at B, which is made large to receive same. C in front view is a special round-head machine screw, the head being larger than hole at B, bottom view, and is tapped into the turned end of bracket A. It is from this point that the seat is made to turn and assume the position desired by the occupant. In the side view is illustrated, by dotted lines, the position of seat when folded up and not in use. It revolved on its bracket center until seat is made to rest close to trimming of the side of tonneau. Back is made of oval iron and is very flexible, and when comfortably trimmed makes an easy and sensible seat. The seat bottom is caned for closed cars. When trimmed the material must not be too thick.

Fig. 3 shows another type of side seat that is more comfortable than the preceding one, but requires more room on account of

Digitized by Google

its being a larger pattern. It possesses the advantage of having a stop to secure it in two positions, i. e., facing forward when in use and when folded close to the side. This lock is positive and the seat is held in the desired position by the coil spring A in side and front views. The back also has an alternating movement, the side view being shown in section to illustrate same. Back C, side view, is fastened to D by a rivet, as shown at B; the upper end of D is made wedge shaped, entering into a similar-shaped opening, which forms the lower end of C. Rivet B keeps the two parts together and the walls of the opening on C regulate the backward and forward movement of the back. The benefit obtained from this arrangement is in securing the maximum amount of slant to ensure a comfortable rest when seat is in its forward position, and at the same time to permit it to lay close to the side of the body when not in use. The back thus assuming a vertical position, bringing the lazy back and the iron D into nearly a perpendicular line. This seat is entirely of castings, including the side brace E, shown in side and front views. The seat frame revolved out of the way when not in use is shown by dotted line on side view. The lip engaging in slot to maintain position of seat is formed by the rib F, which engages in socket that is part of the brace E, the spring A on bolt G, side and front views, bears against the base of the socket and in changing the position of seat, it is necessary to raise it by lifting on the back sufficient to allow the lip to disengage itself. By gentle pressure the seat is revolved in the desired direction until the lip meets the corresponding slot. This seat is very strongly made and has given satisfaction generally.

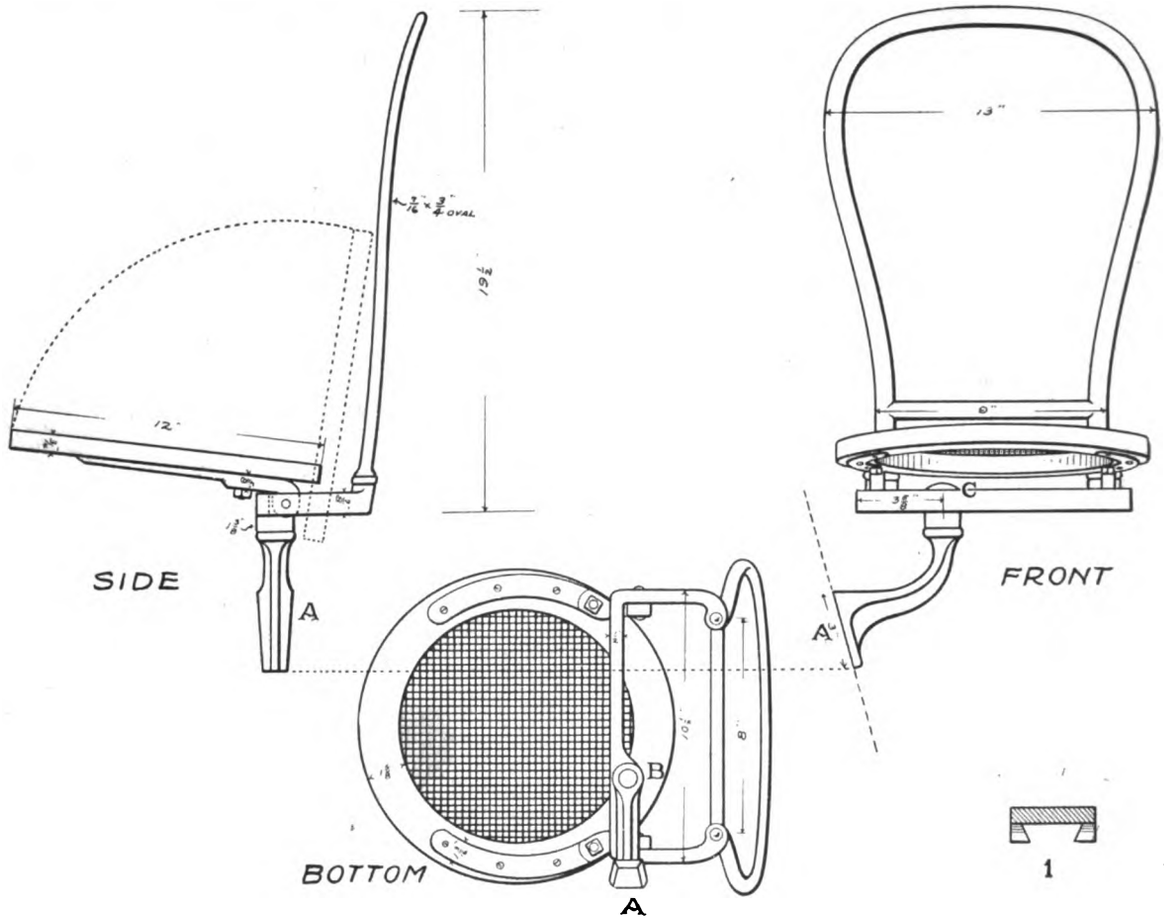


FIG. 2

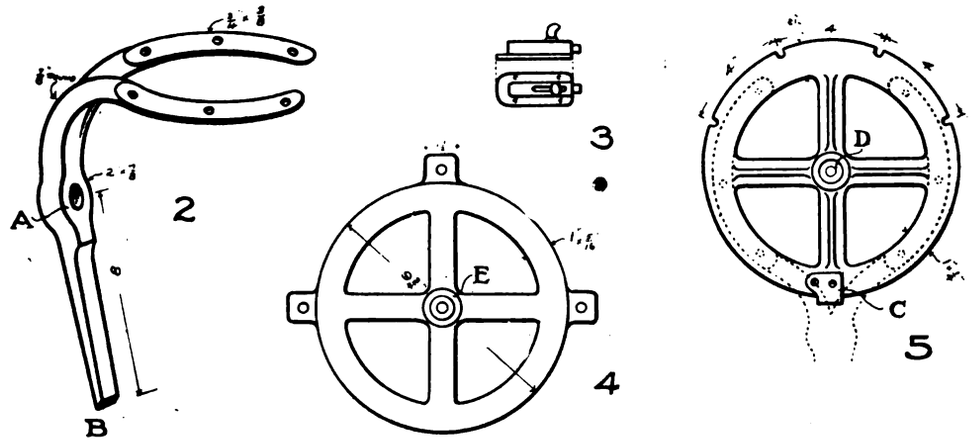


FIG. 5.

Fig. 4 illustrates another type of side seat made without the

Digitized by Google

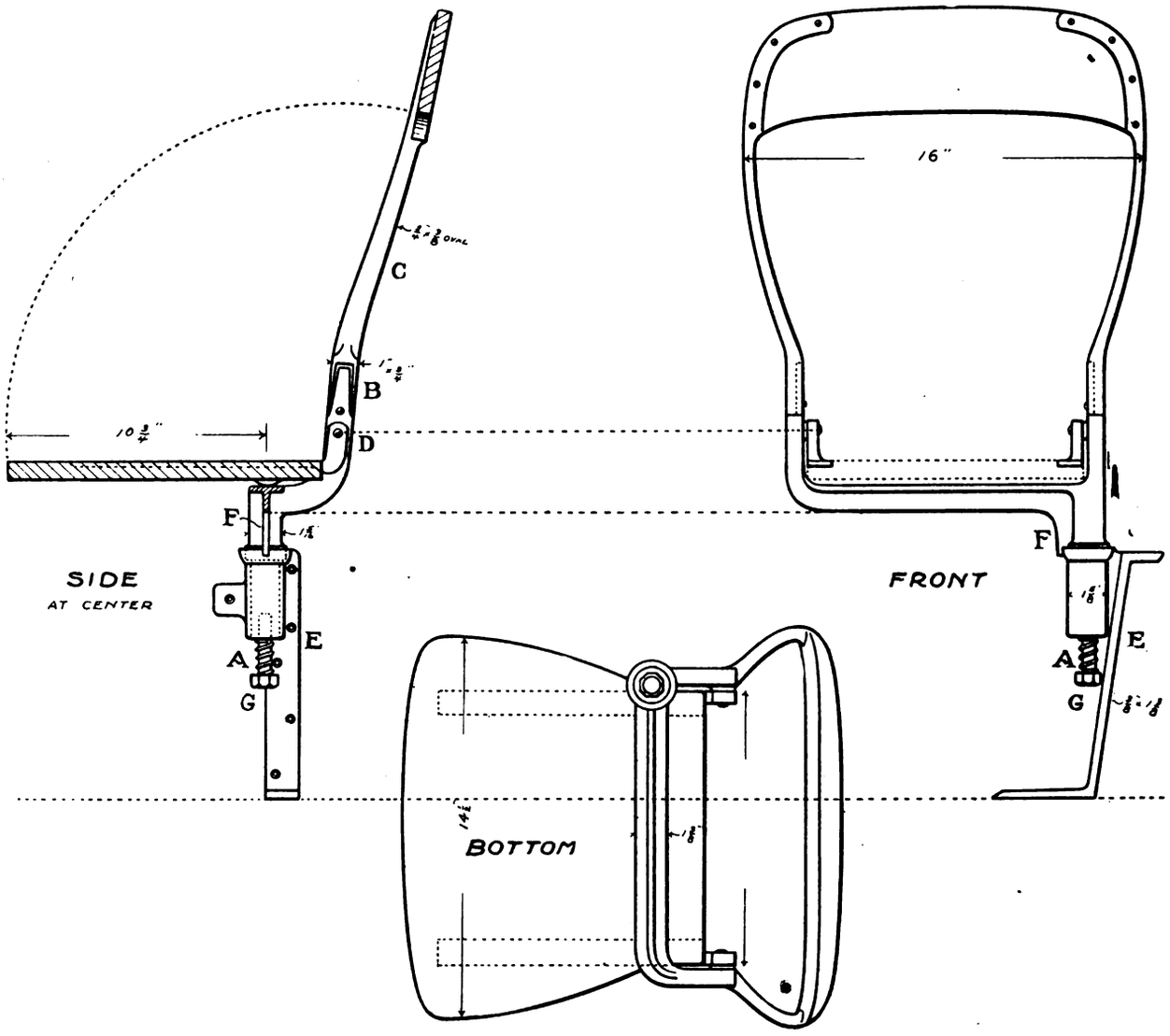


FIG. 3.

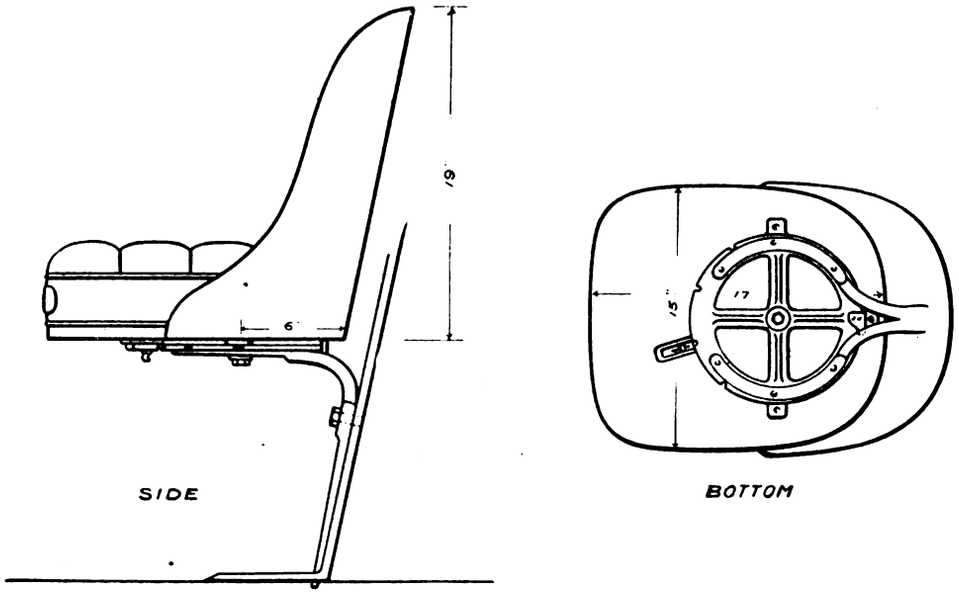


FIG. 4.

Digitized by Google

folding arrangement, which is considered necessary in small cars. This seat is used only where the room inside the body is generous and comfort does not have to be sacrificed for room. It is nearly as comfortable as the average touring car front seat, the back being trimmed quite deep, and the whole made to look like an easy chair. The supports under the seat frame upon which it revolves are made on the principle of the fifth wheel. The various parts are clearly shown in Fig. 5. The brace diagram 2 is forged and fastened to the body with a hexagon machine bolt which passes through the hole A and is tapped into bady braces. The end B is tapered and engages in a corresponding slot in the front of the body brace, as shown in side view, Fig. 4, making a rigid seat support. When the seat is removed no objectionable, etc., protrude into the body to cause interference to the occupants. At the top this brace is riveted to the circle, as shown in diagram 5, by dotted lines. In Fig. 4, bottom view, this brace is also shown. Diagram 3, Fig. 5, is a bolt that locks the seat in position. Diagrams 4 and 5, Fig. 5, are the two circles on which the seat revolves, illustration 4 being fastened to the seat frame by the lugs, as represented. The outer line of diagram 5 is swelled out at the front to allow of space for the bolt, illustration 3 to engage with same. There is also a lip or guide on diagram 5, marked C, which acts as additional strength to the center by keeping the circles concentric when revolving. At the center of this illustration is a boss D, ¼ inch long, that engages in drilled hole E, illustration 4. This boss is, in turn, drilled to take a ½-inch bolt with a large head, fastening with a nut at the bottom and acts as a king bolt which, with the boss D and lip C, makes as serviceable a rotating table as one could desire.

The back is formed with ¾-inch oval iron fastened to seat frame on the sides and with one stay in the center of the back. The trimming is fastened to this and to the frame at the bottom; it can be quite thick and is generally tufted on the inner side. The seat cushion is loose from the frame and held in position by a strap and an edging of band iron that is screwed to the frame, projecting above same ¾ inch, preventing the cushion frame from slipping.

"BUILT ENTIRELY IN OUR SHOPS."

Manufacturers of Automobiles Find It Advantageous to Make Their Own Parts.

In the parts industry to-day the press of business is so great that the parts maker must refuse orders. The disgruntled maker having his order refused, decides to make his own parts hereafter, and so the parts maker loses future business. Since the latter is so overworked at present, he does not mind this in the least.

But this congestion is going to result in more manufacturers installing tools and equipment so as to be able to make their own engines, transmissions, etc., says Automobile. This will mean that more cars will come under the class of "built entirely in our own shops," the advantages of which no one denies. More than all that, although not quite so close to the manufacturer's and user's hearts, is the influence on trade as a whole.

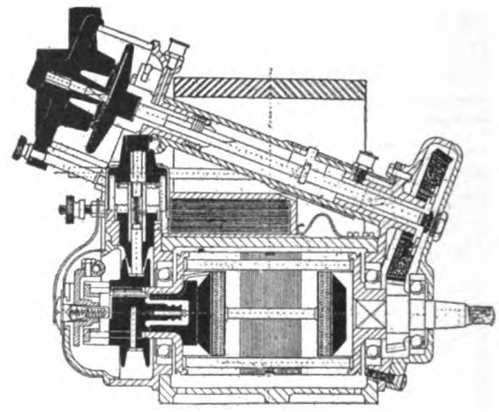
This is bound to be beneficial, for with more capital invested in land, buildings and equipment, any business assumes a more stable position. So, too, as to the disposal of the resulting cars, the greater the output the more care that will be used in disposing of them and in creating a stable market so as to keep the factory busy at all seasons. This should settle down very soon—there are many indications that some firms have already done so—to a business of unwonted stability with the "hot air" and "flim-flam" all eliminated, as well as the season and the model bugaboo, so that the automobile industry as a whole will line up alongside of the typewriter, furniture, clothing and other similar businesses. These, in a broad way, may be said to have no season or models, and their yearly business is very carefully worked up in a quiet way, without any of the hysterics which have attended the automobile business in the past.

NEW IGNITION SYSTEM.

What seems to be a very practical ignition system for magneto machines is described in The Autocar (London) under the name of "Hall Dual Ignition," perfected by Mr. R. F. Hall. This device contains noved features for multi-cylinder automobiles.

In general arrangement the Hall magneto differs very noticeably from the standard type, and is made in two alternative styles—one with inclined, the other with vertical coil and accumulator current distributers.

The armature, which is commendably short and stumpy, is arranged horizontally between box pole pieces in the usual manner, and is supported by one-fourth inch ball races, between the two of which at the driving end of the armature shaft is mounted



the distributing gear pinion. The armature is wound in the usual way with low and high tension windings, and carries at the non-driving end a collector ring in connection with the high-tension circuit, against which bears a carbon pencil surmounted by a spark gap, which, enclosed in a glass case, can be inspected extremely readily. In parallel with the spark gap is a socket plug communicating with the high-tension switch, whereby the current is directed as required to the distributer.

CONNECTICUT VEHICLE FIRM AIDED PEARY TO FIND POLE.

The Dann Bros. & Co., New Haven, Conn., manufacturers of bent wood, vehicle bodies, etc., contributed materially to the discovery of the North Pole by Lieutenant Peary. The firm furnished the bent wood for the sledges which aided the gallant naval officer to accomplish his wonderful exploit. The peculiarly shaped bent runner used on these sledges were made by the firm.

BAD WORKMANSHIP CAUSES FATALITY.

In a recent case in Paris where a driver of a taxicab was charged with homicide and the representative of the company with responsibility toward the victim's family, the Court meted out a lenient sentence to the former and ordered the company to pay to the victim's widow a life annuity of 600f. and to each of her children 500f. a year until they reach the age of 18. Examination of the car had disclosed the fact that the metal work was of bad quality and that it was badly worn, rendering its control difficult.

CHANGES IN CARRIAGE-AUTO LINE.

The Buffalo Auto Truck & Motor Co. have decided to erect their new factory at the junction of the Lackawanna and Pennsylvania Railroads in Leicester, N. Y.

The Ahlbrand Carriage Company, of Seymour, Ind., has moved to its new premises at Laurel Street and Jeffersonville Avenue.

Digitized by Google

FUN AND EXPERIENCE.

An Englishman Describes How He Repaired His Engine—Patience and Perseverance Wins.

There is an old adage which says that it never rains but it pours. This has certainly been true of the major portion of the so-called summer of 1909, but I am rather thinking of the saying in connection with the work I have been putting into my car mechanism lately, says a writer in The Motor (London). For, I had no sooner finished my moderately big job on the inlet pipe—including the hours of experimenting, testing and analyzing in the efforts to diagnose the cause of the trouble, the dismounting of the broken pipe, the fitting and replacing of the repaired article, and so forth—and had had a week or so's service out of the car, when I noticed a gradual increase in a knocking noise. This noise I had heard before, but very slightly, and only occasionally, and had put it down to an occasional missing due, perhaps, to the burning of the sparking plug points, which would cause the gap to be too great for the current to jump at slow engine speeds (I speak of magneto ignition, of course), or, eke, to stratification of the charge when the engine was throttled down, or was pulling hard.

However, this noise increased and became so persistent in the course of a run over easy country that I decided to investigate the cause without delay, and, throughout the remainder of the run, I found that the knocking set in as soon as a speed of about 22 miles an hour was reached, and was so disconcerting that the speed could never be allowed to approach 30. As the car can do its 40 and more without the slightest sign of engine distress, I knew that something, perhaps serious, was amiss. At home, with the engine running in the motor house, I had the stethoscope at work, starting at the rear crank shaft bearing, for I could not avoid the disquieting thought that I had a loose journal, or a worn big-end bearing. But I located the noise in the timing gear, and, as I am but a novice in the use of the stethoscope, I allowed my judgment, rather than my hearing, to fix upon the magneto shaft as the cause of the trouble. I had the bush, in which this shaft runs, renewed after the car had run about 3,000 miles, for the designers had made no direct provision for lubricating the shaft, and the bush became unduly worn in consequence. At the same time I had a grease cup and feed pipe fitted, and my conclusion now was that I had still not been generous enough with the grease. To test the idea that the shaft might be loose in the bush, I took a wooden rod and, letting it bear on the frame, held the end of the rod against the revolving dog that drives the armature of the magneto. In effect, this drove the magneto driving shaft hard against one side of the bush. The noise quieted down considerably, although not completely, and I concluded that the bush might be worn and thus be the cause, although I still was not satisfied. Then, I thought to myself, "When that bush was renewed, the whole job cost me some pounds; a new bush will cost me 3s. 6d., and I can get a lot of fun and experience out of fitting it myself, and, after all, I don't see why I should not be able to fit it as well as the mechanic in whose hands the job would be placed, and certainly I should be more careful over it. I'll do it myself!" In this way our overwhelming confidence makes fools of us!

Difficulties Pile Up.

The next morning I was up betimes, and before it was time to rush in and tumble into a bath the forward end of the engine was clear and the timing gear exposed; the magneto shaft was out, and the bush was found to be in perfect order, the shaft fitting just nicely. But the cause had been located, and in a curious way. I had taken hold of the half-time pinions and had been endeavoring to rotate them to see if they were slack on their shafts, and I had noticed that, apparently, I could very slightly rotate the crankshaft. As this seemed impossible, I fixed my attention on the main driving wheel and observed that it moved on the crankshaft. Eureka! The key was worn!

That evening I made a quick meal, got into old clothes—how oily and begrimed they do become, to be sure!—and set about getting the wheel off. First, the base chamber must come off, and I knew I had difficulty there, because a couple of nuts, on the series of bolts that attach the flywheel to the flange on the crank shaft, foul the end of the case and prevent it from getting away. But I got the base chamber lowered from that point, and nothing then prevented me from removing the wheel. But no appliance that I possessed would shift it. It could be slightly moved radially, but it could not be pulled off without a wheel drawer. I spent the time in overhauling all the crank shaft journals and bigend bearings, and found every nut dead tight—a comforting discovery. Taking the diameter of the wheel and the distance from the back of it to the end of the crank shaft, I looked in the various tool dealers' catalogues next morning, but found no appliance that would do, so I made a dimensioned sketch and asked the Chater-Lea Co. to make the wheel drawer for me, and it came along in a few hours.

Previous experience of this kind of thing made me conclude that I should find that I had overlooked various points that would prevent the wheel drawer getting to work, so I prepared for an hour's delay in fitting it to its job, but here came in one of what I afterward conceded were my two bits of colossal good luck in the handling of the work I had undertaken. The wheel drawer went into place straightway, and, within ten seconds of it being offered up to its task, the wheel was off and the key was in my hands! You don't get luck like that once in a thousand years! But even better was to come.

Asking for Trouble.

I found the key was slack in the keyway, and I concluded that in the uneven running of the engine, due to the fact that one of the cylinders had not been working, as already related, the key had become worn. I took the dog off the magneto shaft, and concluded that the key there was too slack and then I got two new keys cut. A minor intermediate stroke of luck came in when the two new keys went into their places on the shafts at the first attempt. But I was in anxious mood now.

When deciding to remove the magneto shaft I had carefully marked, with punch marks, the main driving wheel, the half-time wheel on the exhaust cam shaft, and the magneto shaft wheel and pinion, and then—though no more about marking! I had no sooner pulled off the main wheel and had taken hold of the two half-time pinions, and tried to rock them about to see if the shafts were loose in their bearings, than I realized I had not marked the inlet pinion! I wanted to kick myself, but nature has so arranged matters that man can neither kick himself nor pat himself on the back! I sat down in front of tha ttiming gear and thought it all out. Having the exhaust side marked and the two valves of No. 1 cylinder before me, and being able to get a sight of the webs of the crank shaft, I discussed with myself the whole proposition of timing. The discussion was carried out under difficulties because of those nuts on the flywheel: whenever I wanted to turn the crank shaft I had to close the base chamber! Moreover, the starting handle was off! But I arrived at a probable setting of the inlet cam shaft, and reconsideration next morning confirmed it.

I searched for marks on the wheel and pinion, and found so many that they were no guide to me. When the new keys were made, I set out to again consider the problem, for I did not want to drive the wheel on and then have to pull it off again, to the possible detriment of the fitting of the key. I could arrive at no other solution than the one already hit upon, so, taking my pluck in both hands, the wheel was driven on and a tight fit secured. Then, every part being clean and sweet, I set to work reassembling, for carburation, ignition and cooling had all become badly disturbed and all the time I feared that it would all have to come down if I had wrongly timed the inlets.

Then came the moment when the engine was all ready and only the timing gearcase remained to be packed with grease and covered up. Should I try to start up now? How I hesitated! Then gasoline was turned on, ignitions were switched on, the

Digitized by Google

starting handle engaged, two pulls given and—the engine started up. The throttle was slowly opened, the ignition gradually advanced, and then full advance was given and the engine was turning at a good 1,500 revolutions with never a knock or an unwonted sound. Only the timing gear rang, but that was due to the fact that they still required their lubrication and were exposed. I shut off and told myself that, after all, the amateur, who has never worked at any bench except in his own private workshop, need not always be sneered at. But I was lucky, as you will admit; lucky, in fact, all through the job. For the car ran well, in a long run I gave it that same day, waltzing up the hills, moving through towns so silently tha tit amazed me, and purring sweetly along the level, deserted stretches where any speed was safe. And the cost? Four shillings: half a crown for the wheel drawer and eighteenpence for the keys. A few pounds of Ridgoleum in the half-time gear and a gallon of oi lin the crank case; these were extras, but it was time new oil and grease went in, so they need not be reckoned in. Time? Yet, but I offset that by experience, better knowledge of my engine, and greater confidence in it. But it took two Turkish baths in quick succession to remove all the ashes that had accumulated in my muscles.

DESCRIPTION OF THE REEVES AUTO BUFFET TENDER.

(Illustrated on Page 343.)

Following is a description of the Reeves auto buffer tender, concerning which an article appeared in the August issue of The Hub. The tender was manufactured for Mr. Reeves, of Columbus, Ind., by the Fehring Carriage Co., of that city:

The tender is carried on two 32-inch wheels with 1-inch square axle and two full elliptic springs. The body measures 60 inches in length, 37 inches in width, 12 inches deep next to the wheels and 15 inches at comb.

Mounted in the body across the rear end is a three-burner gasoline stove. A one-gallon gasoline tank for same is connected by an adjustable L and folds down when the tender is closed. Next forward is a receptacle, 11x11x11 inches, in which is fitted a complete "armorsteel" cooking outfit, each article nesting and telescoping into the other, and consists of two frying pans, four boiling vessels, coffee pot, twenty serving plates, three sauce pans and eight soup tins.

To the left of the cooking outfit is a three-bin vegetable cellar with tray lid for large cooking spoons, cake turners, carving forks, etc.

To the right is a galvanized iron lined refrigerator 21 inches long, 10 inches wide, 11 inches deep, containing six one-pint glass sealers, ice receptacle and large meat tray 17x10-3⅞ inches.

Immediately forward of the refrigerator and extending to the end of the bed is a seven-gallon water cooler. To the left of the cooler is a 13-drawer cabinet intended for all grocery and cooking staples, knives, forks, spoons, tea towels, table covers, etc. In the little open court there is just room enough for two telescoping dish pans to disappear.

The attached picture showing the kitchen open indicates that the two covering lids when opened out form two spacious serving tables. These lids are covered on the inside with padded oilcloth and on the outside with rainproof ducking. The meeting edge of one cover is provided with a patent leather flap and is held in place in transit by two large straps which buckle securely and make the tender rain and dust proof. A small brass hasp and lock is also furnished. A neat little folding dining table is strapped to the inside of one of these lids.

An extra broiler and an Arizona cooker for emergency, a pocket axe and a camp lantern strapped to an outside bracket complete the outfit.

The refrigerator and water cooler are fitted with drain cocks. A rigid pair of folding legs is provided to support the end of the body disconected from the auto.

The tender is painted French gray with black stripe finish and is attached to the steel frame of the car by a neat steel clevis. The wheels have rubber tires and the several parts are so accurately nested that the tender moves even at 20 to 25 miles speed without noise and takes corners perfectly.

The tender weighs 475 pounds, and the extra draft on the automobile is scarcely perceptible. This kitchen has been christened "The Reeves" auto buffet tender. It has been used in serving a great many roadside dinners, and its entire practicability for such service established beyond doubt. The cost of this tender complete was about $125.

AUTOMOBILE POLICE PATROL

Car Weighing 2,980 Pounds Built for Capital City by Franklin Manufacturing Company.

(Illustrated on Page 342.)

The H. H Franklin Manufacturing Company has recently delivered to the police department of Washington, D. C., a police patrol automobile which is most complete in its equipment. It has a Franklin air-cooled 18-horsepower engine, Bosch high-tension magneto and pneumatic tires, all of which are Franklin features for commercial cars.

The car body is of Prussian blue, with Usatonia red running gear; the panels are of three-ply bent wood; the body is of strong and light construction. The upper part is entirely encased with wire grill work; the rear part is protected on all sides with curtains. The driver is protected from the weather by a glass front, by a macintosh apron and by side curtains.

The vehicle is fully equipped to serve as a temporary ambulance. The cushions on the inside seats are removable and the seats are hinged so as to lift and provide space for stretchers and other paraphernalia. The space under the seats is accessible by small doors in the rear of the body .

There is a medicine chest under the driver's seat and another compartment for supplies back of the seat, accessible from the inside of the body. Two brass lanterns are instantly detachable, but are held securely against rattling when in place. The car is equipped with an 11-inch gong.

The pneumatic tires, 37 by 5 inches in size, are specially large for this comparatively light vehicle, thus insuring durability. Pneumatic tires have been placed on Franklin commercial cars after an experience with both solid and pneumatic tires. In front the vehicle has full-elliptic springs and at the rear semi-elliptic and coil. The weight of the car, fully equipped with gasoline and oil, is 2,980 pounds.

CHANGES IN CARRIAGE-AUTO LINE.

The Wisconsin Carriage Co., of Janesville, has turned out its first auto, and will have machines o nthe market for 1910.

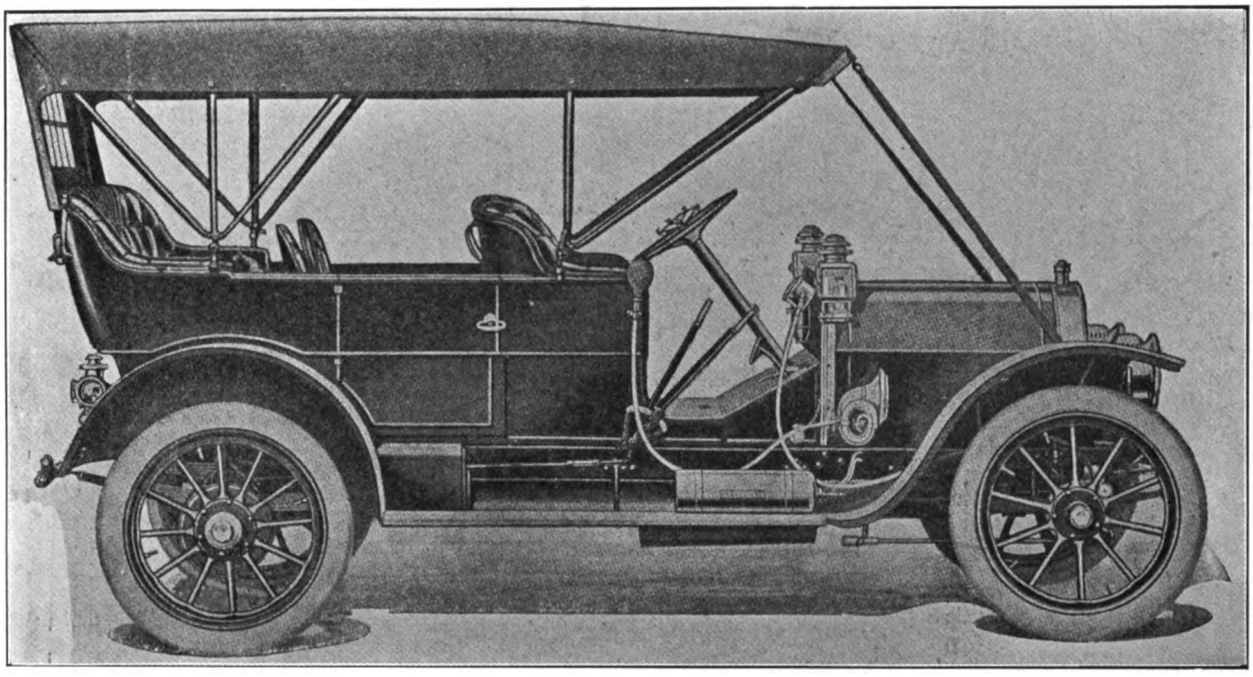
Kern & Son, carriage builders at Coopersburg, Pa., are now building auto bodies and tops.

The Elkhart Carriage & Harness Co. has completed its first regular automobile. The new type is a two-seat vehicle, with low wheels and pneumatic tires instead of the high wheels and hard tires such as are also manufactured by the firm.

At a recent meeting of stockholders of The Findlay Carriage Co., of Findlay, O., it was decided to erect a factory building for the manufacture of automobiles. The company has had this step under contemplation for some time past, and by its long association with the carriage-building business it is expected that a good and valuable connection will soon be established for the automobile branch of the company's business.

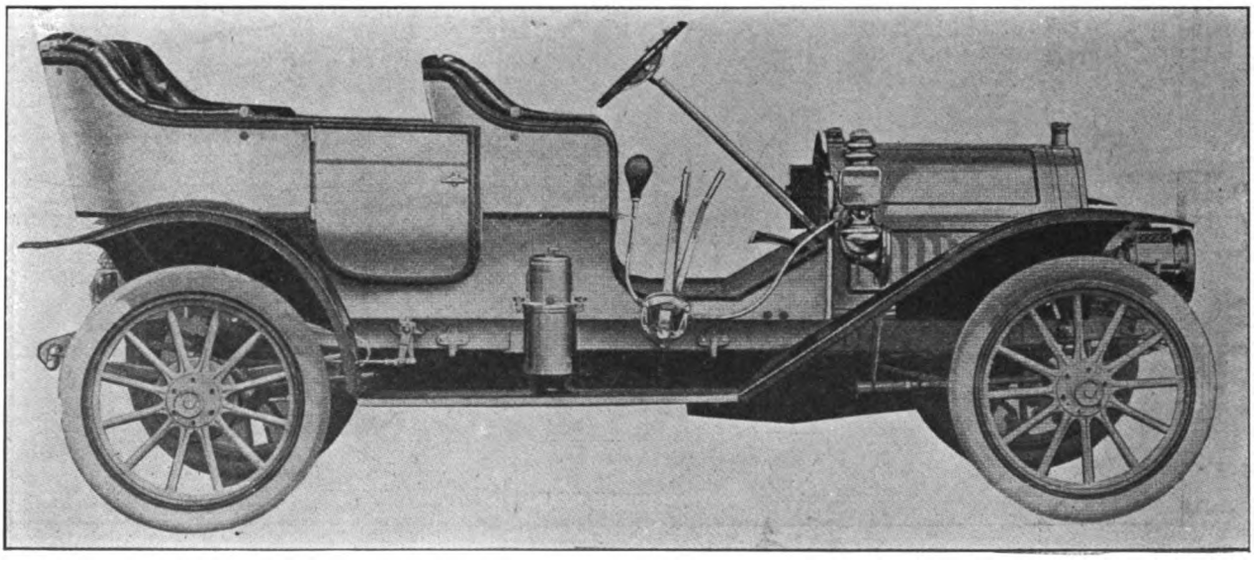
Digitized by Google

Illustrated Automobile Section, December, 1909.



GAETH SEVEN-PASSENGER CAR.

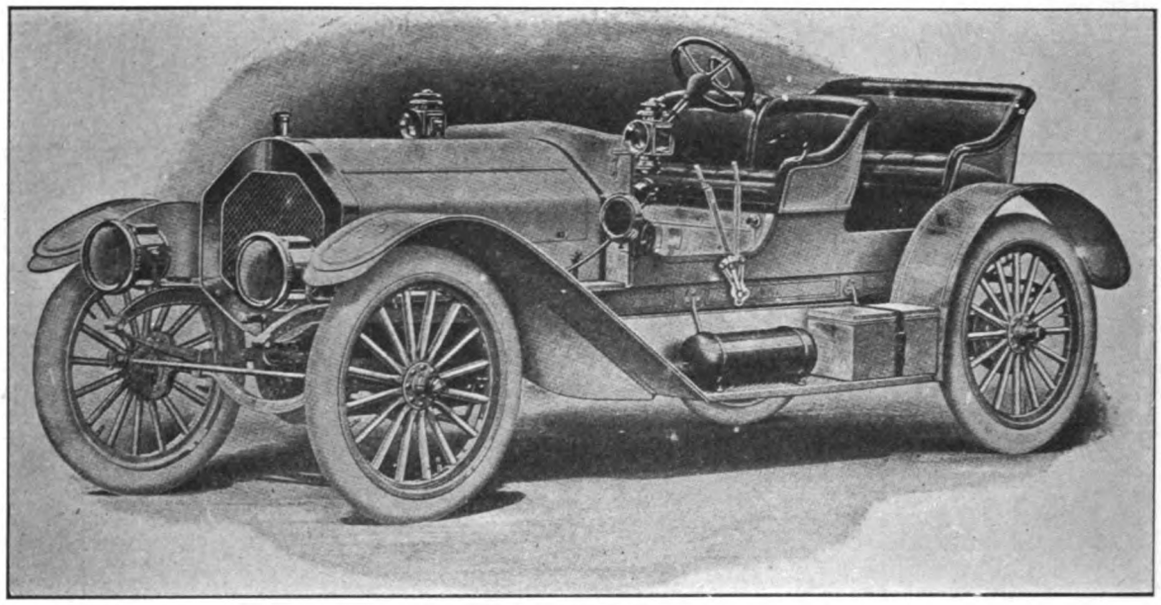
Built by Gaeth Automobile Co., Cleveland, Ohio.



REGAL TOURING CAR.

Built by Regal Motor Car Co., Detroit, Mich.

Digitized by Google



THIRTY-HORSEPOWER FIVE-PASSENGER CAR.

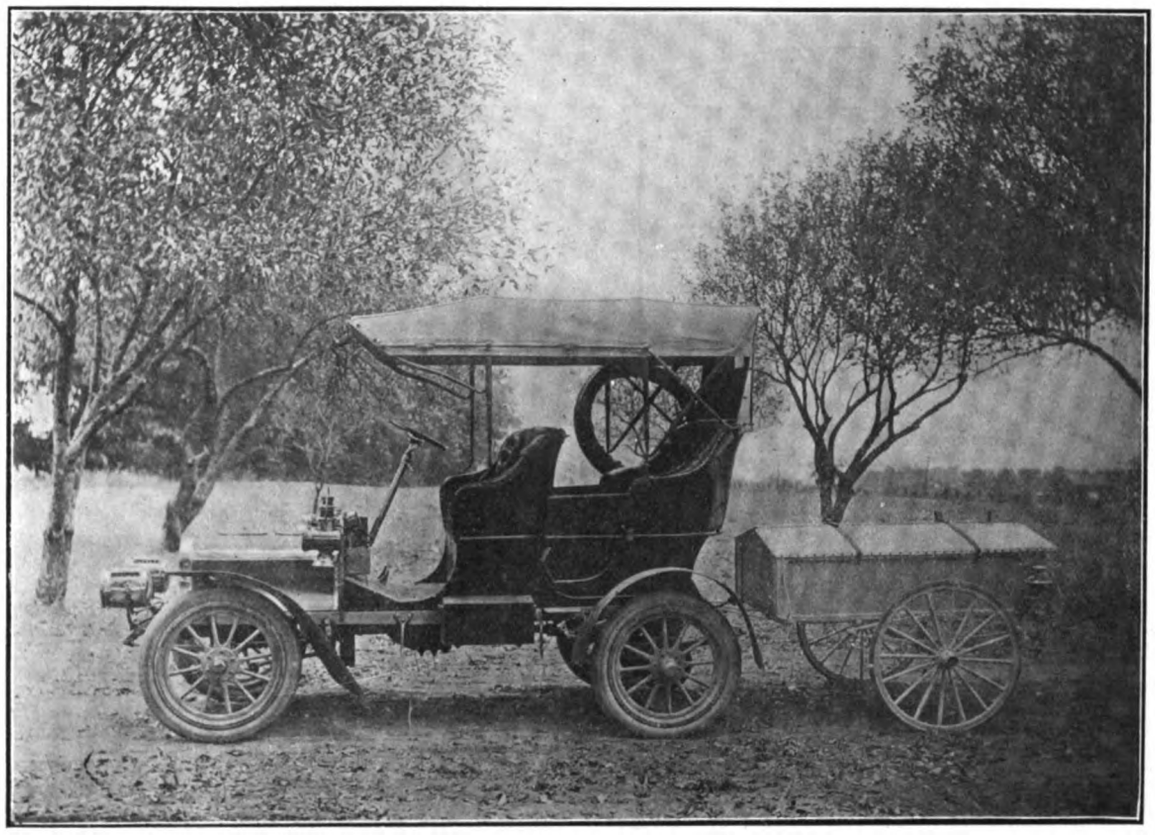
Built by W. H. McIntyre Co., Auburn, Ind.

AUTOMOBILE POLICE PATROL.

Built by H. H. Franklin Mfg. Co., Syracuse, N. Y.

Described on page 340.

Digitized by Google



BUFFET ATTACHED TO AUTO.

THE BUFFET IN USE.

REEVES' AUTO BUFFET TENDER. Described on page 240.

Digitized by Google

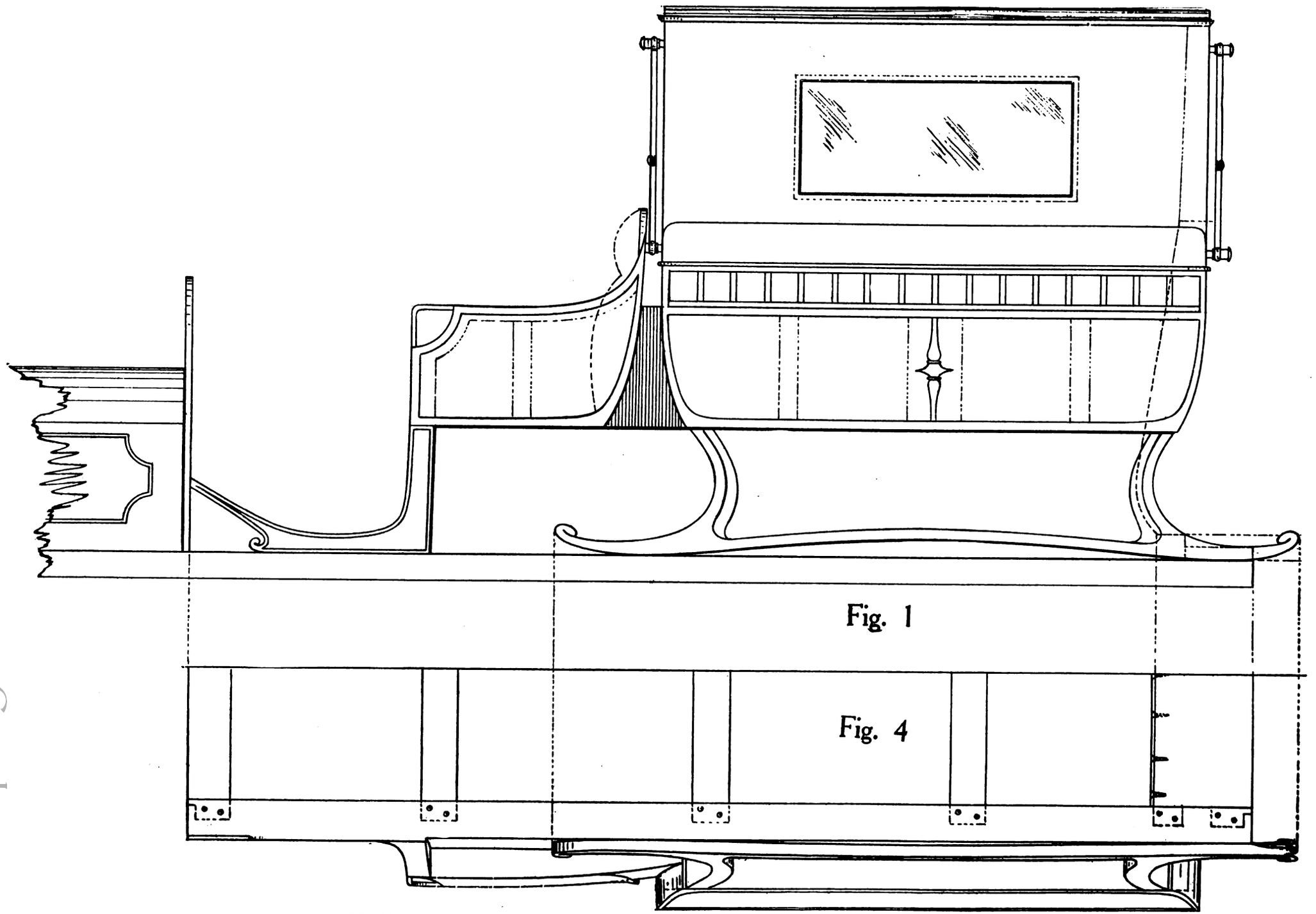


Fig. 1

Fig. 4

WORKING DRAWING OF MOTOR LANDAU WAGONETTE. Described on opposite page.

Digitized by Google

Body Construction and Finish

WORKING DRAWING OF MOTOR LANDAU WAGONETTE.

(Drawing on opposite page.)

The working draft herewith is an adaption of a landau wagonette which was many years ago brought out by Morgan, of London, and subsequently by Stanisfield, of Exeter, England, but to use a catchy expression, it never "caught on." It has, however, been followed by some motor body builders, and is a fitting digression from the general run in the design of these carriages.

The draft under treatment provides seating accommodation for six in the hind body, while the chauffeur's seat gives room

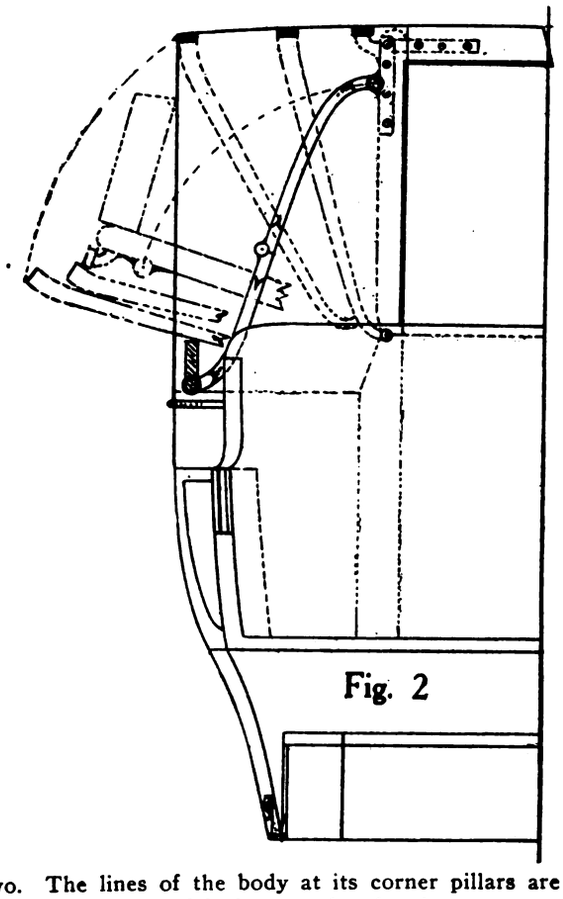


Fig. 2

for two. The lines of the body at its corner pillars are pleasingly agreed with a quick drop to the chassis.

The head is fitted up like a landau head, and opens out in the length ways of the body. The props forming the top pillars of the door and front light pillars are of equal dimensions in the framing space as to the line of the glass frames and door measurements, and are jointed above the waist rail to allow for the fall of the head as in landau and other headed bodies of this character.

The principle of the heads opening is an obsolete method in road carriage wagonette work, but the design of the body as a motor carriage is original in its general outline, and provides a roomy vehicle for family or party uses, while it possesses special advantages as a touring car, whether as an open or closed carriage.

The front seat quarter is framed and panelled, and the moldings worked up in the solid, as is also the body quarters, while the boot sides are solid 7/8-inch stuff, to which the bottom sides are half check framed. The sides are cut up in their sameness, with corner pillar filling up pieces fitted to take the corner pillar lines, the center line between the pieces is filled with a curved line molding.

The door framing requires some practical explanation. It is made precisely as a landau door is framed, and is straight on its inner line to the depth of the glass frame. The bottom part is returned to the shape of the body, as is shown on the pillar drawing in the elevation by dotted lines. The standing and shutting pillars are plated on the inner edge, and along the edge of the cross bar. Edge plating makes the cleanest and strongest job. The hind bottom cross bar is got out wide, so as to line against the face of the door edge plate, which is screwed to it, as shown in the plan Fig. 4.

The head slats are got out the whole length of the head, as explained in the back and front sections, and the side slats jointed to them, as shown in the same sections.

Fig. 1 shows the elevation design with quarter framing. The bottom pillar pieces are worked up with outside molding in the solid to a depth of 3/8 inch, which will show a distinct cut round these lines. The body is made in the framing in the same way as a light bus; the bottom molding of the waist rail is fillet bored out in the solid or painted on; the center spindle on quarter panel is made heavy to take a crest or monogram. The headlight is stitched into the leather as it is made of celluloid, which is pliable to the buckling of the enamel leather with which the head is covered, or the covering may be of fawn-colored twill water-proofing.

Fig. 2 shows the half front section, the width of front seat and body, the mechanism of the folding head and its line of fall. It will be seen that the head flap stands square on the hinge line when the head is down, which is better than allowing the flap a full extension on the prop line. The mechanism of the flap joint shows a solid spindle which is forged into the flap foot to take the side joint boss.

Fig. 3 shows the half-back section, which explains the design of the back of the body in the door-top quarter and waist rail panel. The waist rail is got out in the solid in its full depth, and boxed out to the lines of panel and spindles. The top of the bottom edge is filled down, and the line of the head leather and the plated head setting off the molding width underneath with the thickness of the surplus substance above in dotted line are all shown. The back rest is also shown, and which also forms a rest for the head slats when the head is down. The lines of the head in position and its fall are clearly explained in this section.

Fig. 4 shows the plan of the body and its projection from the bottom side line. The boot side is angled out as in the back bottom quarter in Fig. 3. The pillar pieces and the projectional depth of the body quarter are shown, also the position of the front seat framing in its quarter in relation to the body and its widths. The hind cross bar is shown with double tenon framing, and how the door edge plate is fixed to the inside of the bar, which is a different method of fixing to that generally used. Every departure in constructional design has its practical obligations which have to be effectively met. The hind bottom quarter follows the curve line of the body as in the elevation, Fig. 1, but the doorway is platformed with a footboard, from which the occupant steps to the step fixed to the hind chassis.

In the motor world we are centered in rapid times which is ever on the demand for change and originality. In submitting this design we are keeping the subscribers to The Hub in the van of the world's progress in motor body construction, and at

Digitized by Google

the same time breaking up new ground for the advancement of the craft we have the honor to represent.

The sizes of body are: Length of body an chassis, 9 feet 8 inches; length of body on corner pillar seat points, 4 feet 6 inches; length of seat on front quarter, 21 inches; panel in between front seat corner pillar and body, 9 inches; from dash to front pillar, 24 inches; length of front quarter on elbow line, 25 inches.

Length of hind body on elbow line, 5 feet; depth of boot side, 14 inches; depth of front quarter over seat and elbow, 13 inches; full depth of front quarter at back, 21 inches. Depth of hind

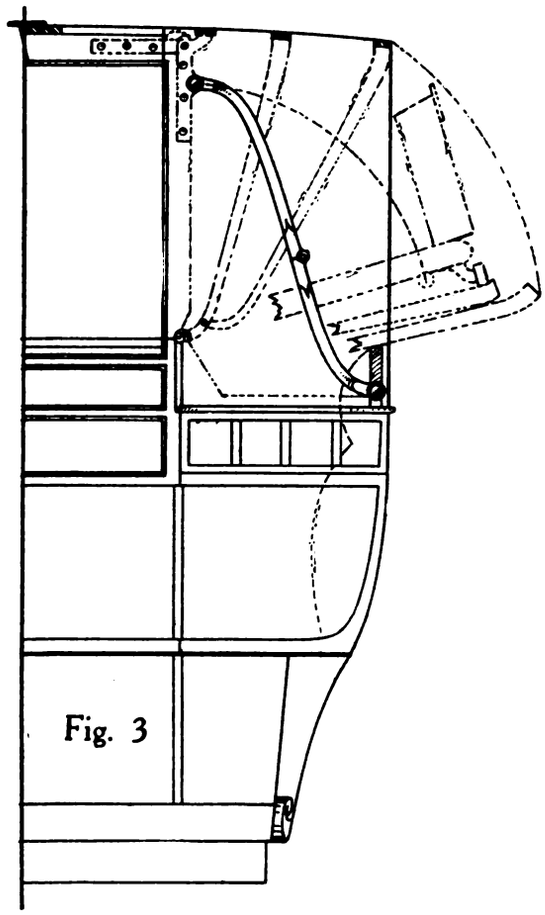


Fig. 3

body quarter over seat and panel molding, 13 inches; depth of waist panel over moldings, 5 inches; depth of head from top of seat, 44 inches; length of head side light, 30 inches by 12 inches; length of front bracket bottom side, 19½ inches.

Width of body on back over solid sides, 37 inches; on top of solid sides, 39 inches; thickness of projecting molding pieces, 1¼ inches on bottom. Width of body on seat line over corner pillar points, 4 feet; on top of waist rail line, 4 feet 6 inches. Width of door, 23 inches; depth of waist rail of door, 11 inches. Width of front seat over pillars, 46 inches; on top of pillars, 48 inches.

NEW TIRE COMPANY.

The manufacture of a sectional truck tire suitable for vehicles traveling on sand roads has been begun by the Palmer-Hawkins Tire Co., of Akron, O., of which the inventor, H. A. Palmer, is president and general manager, and A. W. Hawkins, vice-president. A motor truck for use in the sandy roads of Florida has just been equipped by these manufacturers with a set of their tires, measuring 36x10 inches. They claim the distinction of having made and applied the largest set of solid rubber truck tires ever manufactured or applied in the United States, if not in the world.

AUTOS IN VARIETY AT PALACE EXHIBITION.

American and Foreign Pleasure Cars and Commercial Vehicles of All Types.

Interest is increasing in the coming automobile show at the Grand Central Palace, for the reason that at this exhibition will be shown many of the leading makes of American cars, as well as the products of the foreign factories direct from the London show, which will be exhibited at the Palace for the first time in America. Among the American exhibitors will be a majority of those who have recently joined the Licensed Association, so that the display will be as comprehensive as ever.

While it is conceded that the American manufacturer now leads the world in the production of automobiles, it is also true that many new ideas of body building and certain details of refinement are annually brought out by foreign makers.

These up-to-date features in body building, upholstery and coach work appeal particularly to the wealthier class of automobile buyers, and while they may not always buy the imported car they insist that sooner or later some of these ideas be incorporated in the American-built car. However, if American makers use some of the foreign ideas it is only a case of reciprocity, as, judging from the Olympia exhibits, the foreign makers are now copying quite liberally from American car practice and design.

In the line of commercial vehicles this year's Palace show will have a very complete and comprehensive display. No fewer than 17 manufacturers exhibit their products, ranging from a light delivery wagon of two or three hundred pounds capacity up to huge trucks which can haul 20,000 pounds with ease over the roughest and steepest roads.

The makers who will exhibit commercial vehicles include the Rapid Motor Vehicle Company, Mack Brothers Motor Car Company, Grabowsky Power Wagon Company, Landsden Company, Randolph Motor Car Company, Chase Motor Truck Company, American Motor Truck Company, Reliance Motor Truck Company, Cram-Logan Motor Car Company, Saurer Motor Truck Company, Hart-Kraft Motor Company, Marton Carriage Works, De Dion Bouton Import Company, W. H. McIntyre Company, Brush Runabout Company and Holsman Automobile Company.

COLD WEATHER PRECAUTION.

A large number of motorists who store their cars away for the winter do not take proper care of their tires. A good many tires are allowed to deteriorate because of this, and when the cars are put into commission again in the spring, the casings do not give the service they should.

When a car is laid away for the cold months, the wheels should be jacked up and the tires deflated. It is esential that they should be kept in a place where no sunlight can penetrate; a cool, dark place being preferable. Owners should examine their rims and cleanse them of any rust, which of course necessitates the removal of the tires, following which a little graphite should be applied to the rims before replacing the tires.

A little attention to spare casings and tubes before putting them away will mean added service in many cases. If there are any cuts in the shoes, they should be filled with a good cement and if there are any spots where the fabric is exposed, it should be seen to that these are perfectly dry.

AUTO PRICES UP.

The automobile prices are going up rather than down, owing to the increased cost of tires and the shortage and difficulty of the manufacturers to get parts, is one of the signs of the times.

Already three prominent makers have announced a slight increase in the price of their 1910 product, and it is said that by show time several more manufacturers of low and medium priced cars will follow their example in putting up prices.—New York American.

Digitized by Google

SIGNS OF THE TIMES IN MOTOR CAR CONSTRUCTION.

Not so very long ago motor car manufacturers thought of nothing but the motor and chassis ,and in almost every case chassis were exhibited in their show rooms sids by side with the finished car, no thought whatever was given to the coachwork, beyond the fact that a body was necessary to carry the passengers. This idea we are bound to say was the feeling of the general public, engendered no doubt, by the novelty of mechanical traction on the common roads, says Cooper's Vehicle Journal. Moreover the motor and chassis had not been brought to the state of perfection it has now reached, when long tours can be undertaken with as much certainty of freedom from breakdown as short drives can be taken in a horse carriage. When the motor was in its embryo stage, public interest was centered in the mechanical portions of the vehicle and in those only, and the body was with the public as with the engineer a secondary consideration, even indeed if it came into consideration at all, once an open or a closed car had been decided upon.

The chassis, by which we mean themotor and all its accessories, so far as traction is concerned, has now reached such a state of perfection that its reliability is taken as un fait accompli and the purchaser of a car does not worry himself about little points of chassis design, such as the position of valves, the class of magnetos, the strength of gear wheels, and the other innumerable engineering details which he or more especially she cannot understand, even when they are pointed out to them by the zealous salesman, and do not want to, as they are content to leave all that to the manufacturer, confident that when buying a well-known make they are getting a reliable chassis. The motorists, feeling satisfied that they will have a reliable motor are more and more busying themselves about the coachwork.

Thus, having been used to carriages all their lives, perhaps they do understand and are keen to see that they have a handsome, graceful body well-finished with a well-upholstered interior fitted with all the little knick-knacks such as canteens, mirrors, bouquet holders, perfume bottles, and may we say without offence to the fair motorists ,receptacles for their cigarettes and the indispensable electric cigarette lighter, which go to make the finished car.

As a sign of the times and demonstrating what is now acknowledged to be the principal factor in selling a car, the manufacturers now display in their showrooms nt extra chassis without the body, but extra bodies upon stands without the chassis. This, no doubt, is the outcome of the popular desire to have special bodies made to order, instead of the standard designs which many firms have attempted to force on their customers. Standardization we have always been of opinion will not satisfy the private customer. It is all very well for public vehicles made in their thousands, but for private cars it will never be accepted by the moneyed classes. The motor cab and the motor bus we have always maintained in the columns of this journal would eventually kill the private trade if variety and elegance in designs were not made to be the special feature of the private car, combined with every luxury in upholstering and fitting of the interior.

The aristocracy by birth or by fortune of the twentieth century are born and reared in luxury, in luxury they pass their lives—at least so far as the rich are concerned, and they are the only section it is worth the while of manufacturers if high-grade cars to cater for, and for this class the small saving effected in marketing standardized bodies is not worth the consequent loss of selling features and the extra profit which a new design brings. Now that the general interest in the details of the chassis has subsided, we are pleased to see that the manufacturers are rising to the occasion and giving more attention to the coachwork, as it is that and that only which will lead to another boom, or indeed keep the ball rolling .

WHEELBASE MAY BE SHORTER WITH HIGH WHEELS.

High-wheeled automobiles are often confused with that peculiar type of vehicle which belongs to neither the high-wheeled nor pneumatic-tired class, says H. K. Holsman, and is therefore lacking in the virtues of either, while possessing many salient faults belonging entirely to itself.

True high-wheeled automobiles must have wheels of sufficient diameter and resiliency to give the necessary riding qualities and to protect the machine from injury from road shock. It has been my experience that in order to gain results it is necessary to use a wheel of at least 40 inches in diameter. The increase in diameter of a wheel not only furnishes a spoke of sufficient length to give the necessary resiliency, but also produces the effect of an increased wheelbase, inasmuch as the vertical motion of the wheel in rolling over uneven surface will be found to be in about exact proportion to the diameter, so far as the motion affects the occupants of the vehicle, and, therefore, a car equipped with 48-inch wheels and having a wheelbase of 60 inches would possess all of the riding qualities of 120-inch wheelbase mounted on wheels of one-half that diameter. Of course, the machine itself is also relieved from the severe vibration which would be due to the greater vertical movement, and a little road experience is enough to establish the fact.

It is a well-known fact that it requires less power to drive a high wheel than a low wheel over the same road, the difference being inversely as the diameter. It is also true that the high wheel is much more easily steered, and that on account of its yielding qualities the side vibration is taken up.

Contrary to the general belief, rubber tires of small section are employed on this type of car, not because of their lesser cost, but because tires of greater section are an actual disadvantage—first, on account of the disagreeable bounce of the wheel fitted with the large tire, and, second, because of the fact that small tires can be driven where it would be impossible to drive a larger one.

Present high-wheeled automobiles were originally designed for localities where the roads were so poor that the pneumatic-tired machine could not be used. It is the equal, if not the superior, of the low-wheeled type on well-paved streets, and, while the low-wheeled car is limited to highways in more or less good condition, the high-wheeled car may be operated over exceedingly rough roads, deep mud or snow, with little or no inconvenience. There is a perceptible lessening of prejudice in favor of the low-wheeled car owing to the general awakening of the public to its limitations, and the increasing recognition of the possibilities of its high-wheeled brother.

COMING AUTO EVENTS.

The show dates for the makers of self-propelled vehicles have been fixed, and the schedule of events for the big cities follows:

December 31 to January 7—New York City, Grand Central Palace, Tenth International Automobile Show; American Motor Car Manufacturers' Association, with Importers' Automobile Salon and Motor and Accessory Manufacturers.

January 8-15—New York City, Madison Square Garden, Tenth National Show, Association of Licensed Automobile Manufacturers.

January 17-22—Philadelphia, Second Regiment Armory, Automobile Show.

February 5-12—Chicago, Coliseum, Ninth Annual Automobile Show, National Association of Automobile Manufacturers.

February 14-19—Buffalo, N. Y., Broadway Arsenal, Eighth Annual Automobile Show, Automobile Club of Buffalo.

February 22-26—Kansas City, Mo., Convention Hall, Fourth Annual Automobile Show.

March 5-12—Boston, Mechanics' Building, Eighth Annual Automobile Show, Boston Automobile Dealers' Association.

Digitized by Google

TWELVE AUTO BUILDERS IN INDIANAPOLIS.

It is estimated that next year's production of autos in Indianapolis will be 25,000 cars. Another new company has just been added to the list, making twelve concerns in the city now making automobiles. The new company is the Star Motor Car Company with an authorized capital of $100,000. Guy G. Shaw is president; J. W. Berauer, vice-president; S. J. Summers, secretary, and W. A. Rowland, treasurer. A plant will be built at once and a line of runabouts and touring cars to sell at about $1,000 will be made, together with delivery wagons and trucks. In additin to this, there will be three other practically new local companies in the field during the 1910 season. These are the Cole Motor Car Company, organized from the motor buggy business of the Cole Carriage Company; the Parry Automobile Company, which will build 5,000 cars, and the Empire Motor Car Company.

PRESIDENT SPEARE RECOMMENDS NEW CONDITIONS.

Lewis R. Speare, president of the American Automobile Association, in making his report to the national body's Board of Directors annual meeting recently recommended that the annual A. A. A. tour, heretofore known as the Glidden Tour, be materially changed in future.

It is ever said that the famous touring trophy will be returned to Charles J. Glidden, to be disposed in some manner suitable to the donor. In place of the Glidden Tour will be instituted what will be known as a National Tour. Its object will still be to demonstrate to the fullest extent the endurance of the automobiles engaged, but the method of determining the winner, or winners, and of distributing the glory, will be materially altered It will thus be possible for a car, having traveled hundreds of miles on a stiff schedule, and having met perfectly every touring requirement in the conditions laid down, to be deprived of the highest honors through a slight mechanical defect that in no wise affected the stability of the machine.

It is proposed that the National Tour will not have any prize the possession of which will be indicative of a single winner. Instead, it is planned to award certificates of performance in consonance with the showing of each car engaged. The rules to govern the contest in future will be drawn up shortly by the Manufacturers' Contest Asociation. These rules, it is anticipated, will not dispense with the customary examination of the contestants at the finish of a tour, but the technicians will penalize only for defects that are distinctly a menace to the further reliability of the car under examination.

It will, therefore, be possible for one or two or a dozen cars to gain an equally high award in the tour, and no car that has proved its worth as a touring machine will be deemed inferior to another unless for a substantial reason. In view of this change of methods the annual tour, which has recently failed to attract large numbers of entries, will probably experience a healthy revival.

AUTO COMPANY PLANS NEW FACTORY.

The Colburn Automobile Company, of Denver, Colo., is planning the erection of an automobile factory to cost $60,000, exclusive of machinery, with a capacity of 500 high-grade machines a year. Plans have been drawn for the building, and work will be begun as soon as a site can be selected. Several sites have been considered, but it is believed that a site near Overland Park will be chosen, and the details of its purchase will soon be completed. The company expects to have the factory ready for operation by April 1.

David Beecraft, one of the best-known automobile writers in the country, will be the next president of the Chicago Motor Club.

THIRTY-FOUR NEW AUTO CONCERNS.

In Ten Months This Many Have Started in Michigan With $15,423,000 Capital.

Figures compiled by the Secretary of State show that the automobile industry has made wonderful strides in Michigan during the past ten months. Statistics show from January 1 to November 15, inclusive, 34 automobile companies representing a capital of $15,423,000 have filed articles of incorporation with the Secretary of State.

The capital stock of the companies range from $5,000 to $10.-000,000. The Packard Company, of Detroit, incorporated for $10,000,000, was the largest concern to file articles this year. In addition to the companies organized for the manufacture of automobiles, there were 54 companies which organized to manufacture automobile parts. The total capitalization of these concerns is $1,680,000.

The Staver Carriage Co., of Chicago, have issued their catalogue for 1910. Many new models and designs are shown in its pages, especially fine buggies and carriages of which this well-known house makes a specialty. The book is profusely illustrated and interesting purchasers should procure a copy.

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, 5 cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

SITUATIONS WANTED.

Wanted—Position by a trimmer as foreman, or work by contract. Have been ten years with present employer as foreman. Address "L. W.," care The Hub, 24 Murray Street, New York, N. Y.

HELP WANTED.

Wanted—Foreman to take full charge of our body-making department and mill room. Must thoroughly understand construction of paneled top wagon. We want the most competent man in the world. Steady employment and highest salary. Must give satisfactory reference. The O. Armleder Co., Manufacturers of Business Delivery Wagons, Cincinnati, Ohio.

Wanted—Foreman for carriage wood work department. Also a first-class bench hand for carriage body department, capable of working from drawings. Address "C. D.," care The Hub, 24 Murray Street, New York, N. Y.

Wanted—A wood shop foreman for Canadian factory with output of 10,000 wheeled vehicles and 5,000 sleighs. None but experienced men need apply. Highest wages. Address "C. D., care The Hub, 24 Murray Street, New York, N. Y.

Wanted—Salesman to sell Perfection Wagon Umbrellas on commission. Strongest and most simple constructed umbrella ever shown. Easy to sell. The Perfection Manufacturing Co., St. Louis, Mo.

FOR SALE.

For Sale—Imported Rothschild limousine body. Built for royalty. Seats seven passengers. Color dark blue. Copper gasoline tank. Fits Packard chassis. Genuine leather upholstery. Cost $4,000. Looks like and is equal to new. First check for $300 takes it. Automobile Repair Co., 811 North Broad Street, Philadelphia, Pa.

BUSINESS OPPORTUNITY.

Business Opportunity—Open for live, up-to-date carriage man with $10,000 to $15,000 to invest in stock of thrifty carriage concern in the West, earning 20 per cent annually. Business increased 40 per cent in past year. Sales, $500,000. A good salaried position also to experienced man. Reason for selling ill health. Address "F. E. G.," care The Hub, 24 Murray Street, New York, N. Y.

PATENTS.

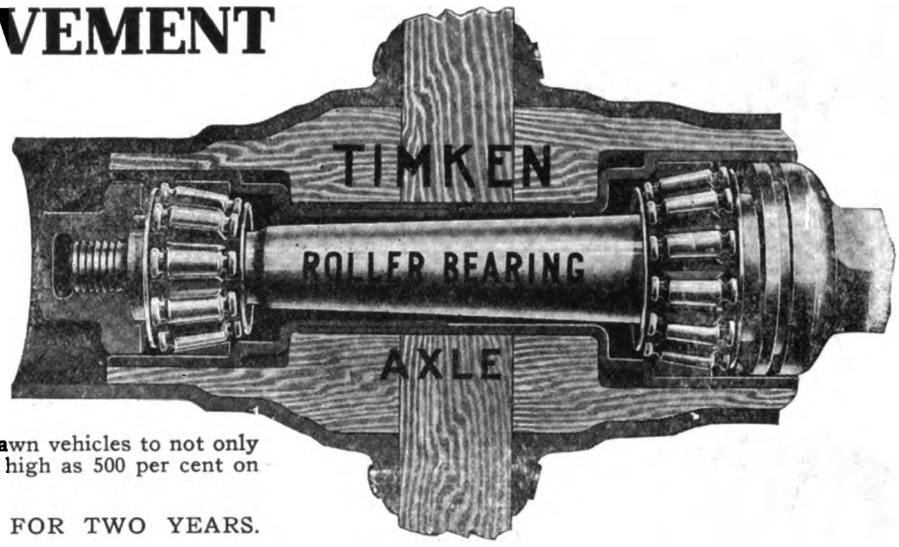
Patents—H. W. T. Jenner, patent attorney and mechanical expert, 608 F St., Washington, D. C. Established 1883. I make an investigation and report if a patent can be secured and the exact cost. Send for full information. Trade-marks registered.

Digitized by Google

EACH IMPROVEMENT

added to every vehicle you manufacture or sell, adds to that vehicle's sale ability.—Take the question of axles and bearings for instance—Did you ever figure out why Carriage Manufacturers are still using friction axles on their product and some dealers still believe in them—when anti-friction axles of

THE TIMKEN ROLLER BEARING AXLE



type have been proven through years of use and experience by the largest makers of both Automobile and horse-drawn vehicles to not only reduce the draft 50 per cent, but earn as high as 500 per cent on the amount they cost,

AND THEY ARE GUARANTEED FOR TWO YEARS.

Now, why with such a splendid trade argument do you hesitate in equipping with or specifying on all vehicles you handle,

TIMKEN ROLLER BEARING AXLES

It will make selling easier—and make better satisfied customers, both of which mean profit for you. Write us, won't you, for catalogue and prices?

THE TIMKEN ROLLER BEARING CO.

Branches
10 E. 31st Street, New York
429 Wabash Avenue, Chicago, Ill

Canton, Ohio.

OPENS NEW YEAR'S EVE

DEC. 31 to JAN. 7

All Leading American Cars
All Foriegn Cars
All Accessory Makers

Taxicabs
Commercial Vehicles

Management of American Motor Car Manufacturers' Association

Finest Decorations by Unitt and Wickes ever offered at any Motor Car Exhibition

Grand Central Palace

FORTY-THIRD STREET and LEXINGTON AVENUE, NEW YORK

Admission, 50c.; Tuesday, $1.00

Digitized by Google

A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

H. K. PORTER
BOLT CLIPPERS
27 YEARS 27 YEARS
EVERETT, MASS., U.S.A.

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

Let us send you Catalogue and Price List.

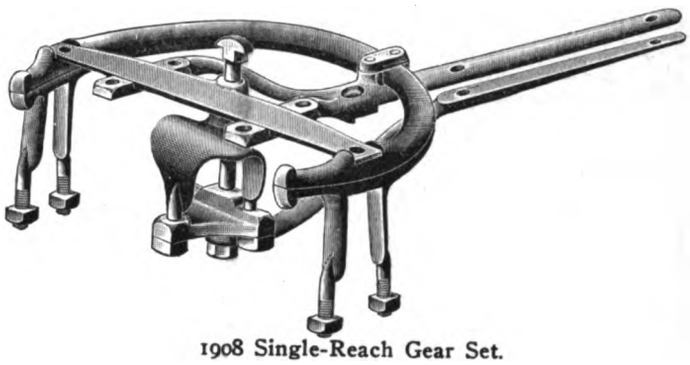
American Roller Bearing Fifth Wheel Co.

745 THIRD AVE., BROOKLYN, N. Y.

INDEX TO ADVERTISEMENTS.

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.

Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

Our Carriage or Spring Edge Cushion Frame

Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

NATIONAL SPRING and WIRE CO., ALBION, MICH., and ST. CATHARINES, ONT., CAN.

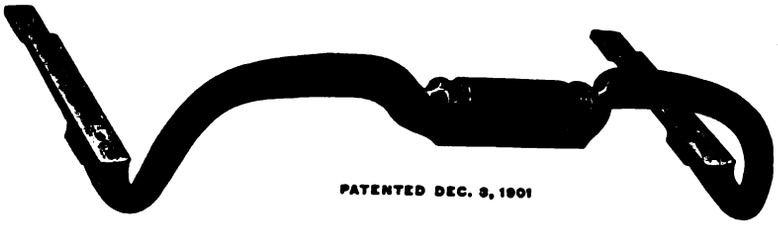
Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.

Newark, N. J.



PATENTED DEC. 3, 1901

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland, Pa

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

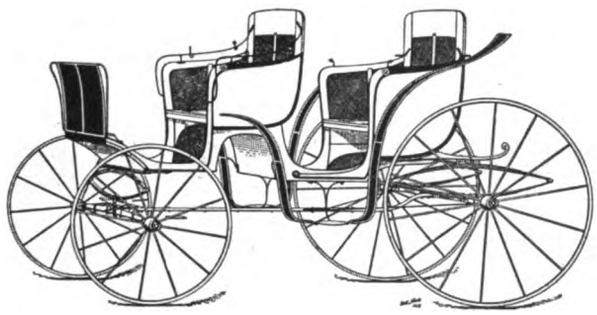
Digitized by Google

Vehicles in the White

WITH TRIMMINGS OR WITHOUT
THAT'S THE WAY WE MAKE THEM

GREATEST VARIETY OF STYLES ON THE MARKET.

AUTOMOBILE BODIES A SPECIALTY



OUR LINE OF GEARS WILL INTEREST YOU.
MORE THAN FIFTY DIFFERENT STYLES.

WRITE FOR OUR CATALOGUE.

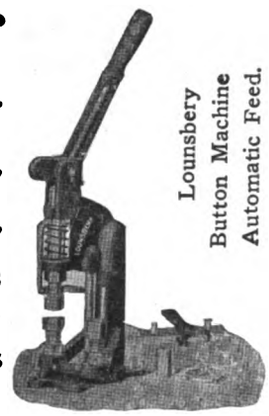
Schubert Bros Gear Co.
ONEIDA, N. Y.

Brazil Leather

FOR AUTO BUGGY TOPS

SEAT AND BACK SPRINGS,
COTTON, NAILS, WADDING,
MOSS, TACKS, WASHERS,
HAIR, BUTTONS, REEDS,
REED MOULDING,
CLINCH BUTTONS

G. H. Lounsbery & Sons
Cincinnati, Ohio



The Tires for Satisfaction

Goodyear Wing Carriage Tires and Goodyear Eccentric Cavity Cushion Tires with canvas guides are tires that wear—that give satisfaction and increase the dealer's trade. For all

GOODYEAR

tires are made of new, pure rubber, not of reclaimed "rubber" from the junk heap, nor any low grade. They sell easily because they save the user money—which pleases him—and he tells his friends.

Write today for free booklet showing how Goodyear Carriage Tires are built. Ask for sample section.

THE GOODYEAR TIRE & RUBBER CO., Canal Street, Akron, Ohio

Boston	Philadelphia	Cleveland	Buffalo	Denver
Los Angeles	New York	Chicago	Detroit	St. Louis
Cincinnati	San Francisco	Pittsburg	Atlanta	Washington

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.
Timken Roller Bearing Co., Canton, Ohio.

Bodies, Seats, Etc.
Woodman, Joel H., Hoboken, New Jersey.

Bolts and Nuts.
Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.
Wiese & Co., Wm., New York City.

Carriage Forgings.
Cortland Forging Co., Cortland, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.
Gifford & Son, John A., New York.

Carriage Goods.
Cortland Forging Co., Cortland, N. Y.
English & Mersick Co., New Haven, Conn.
Gifford & Son, John A., New York.
Herbrand Co., The, Fremont, O.

Dashes, Fenders, Rails, Etc.
McKinnon Dash Co., Buffalo, N. Y.

Fifth Wheels.
American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Jacks.
Hankinson, J. V., Franklin, O.

Lamps.
Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Machinery and Tools.
Barnes Co., W. F. & John, Rockford, Ill.
Porter, H. K., Everett, Mass.

Miscellaneous.
Standard Oil Cloth Co., New York.

Props and Bow Sockets.
Crandall, Stone & Co., Binghamton, N. Y.

Rubber Tires.
Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Swinehart Climber Tire & Rubber Co., Akron, O.

Shaft Couplings and Anti-Rattlers.
Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Metal Stamping Co., New York City.

Springs and Gears.
Fitch Gear Co., Rome, N. Y.
National Spring and Wire Co., Albion, Mich.
Spring Perch Co., Bridgeport, Conn.

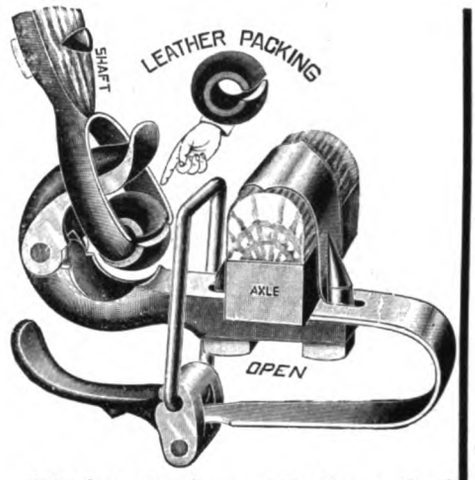
Trimming Materials.
Stevens & Sackett Co., New Haven, Conn.

Varnishes, Paints and Japans.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Masury & Son, John W., New York and Chicago.
Louderbach, A. E., New York.
Manders Bros., Wolverhampton, England.
Moller & Schumann, Brooklyn, N. Y.
Pierce Co., F. O., New York.
Smith & Co., Edw., New York.
Standard Varnish Works, New York City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

Wheels.
Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.
Union City Wheel Co., Union City, Ind.

Wheel Stock, Bent Wood, Etc.
Crane & MacMahon, New York.
Tucker Wood Work Co., Sidney, O.

Digitized by Google



Placing the loop over the end of the cap and drawing the thumb lever back until it rests against the flat spring closes the coupler, keeps it closed, and takes up the wear of the leather packing.

Unless a Carriage Coupler is furnished with a moulded leather bushing and steel spring JUST LIKE THIS it is NOT a BRADLEY.

THE BRADLEY Carriage Coupler

All steel, Noiseless, Quick Shifting, Ball Bearing.

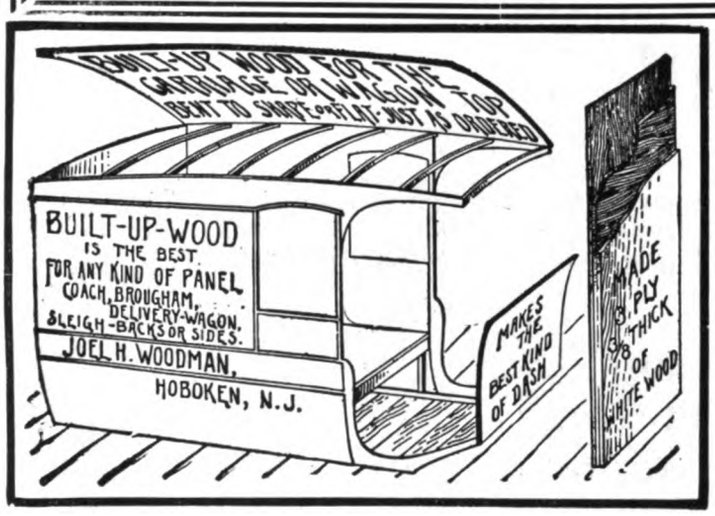
The ONLY Carriage Shaft Coupler that is furnished with a

One-Piece Moulded Leather Packing

A packing that will outwear any other packing ever made. It fits the ball and socket. It is held in place by a spring steel retaining ring. It may be put on and taken off in a jiffy, and it stays where it is put.

C. C. BRADLEY & SON

SYRACUSE, NEW YORK.



SOLID BENDINGS

MAKE FAULTLESS SEATS

CATALOG "H" SHOWS SIZES
WRITE FOR IT

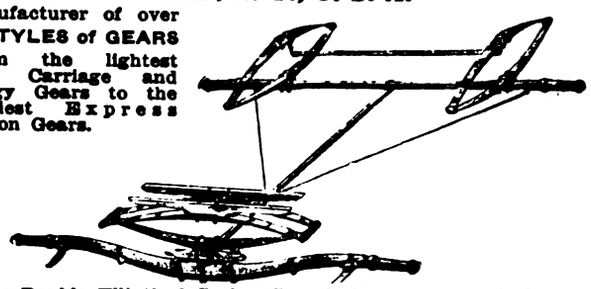
THE TUCKER WOODWORK CO. SIDNEY, OHIO.

FITCH GEAR COMPANY

ROME, N. Y., U. S. A.

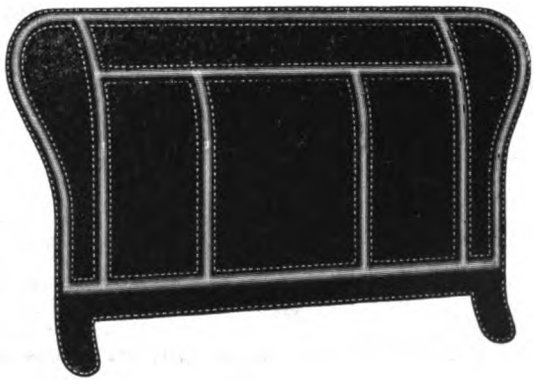
Manufacturer of over 40 STYLES of GEARS

From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.



The Double Elliptic 3-Spring Gear is the most practical combination business and pleasure gear on the market, and is equipped with Wrought or our Common Sense Short Turn Fifth Wheel. Send for our No. 24 Catalogue.

Digitized by Google



HIGH GRADE

Dashes and Fenders

THE INDIANAPOLIS DASH CO.

INDIANAPOLIS INDIANA

WHY NOT USE THE MEYER THREADS

AND SPOOL SILKS FOR

CARRIAGE and AUTOMOBILE WORK

Every spool warranted. Buy direct from the manufacturer. Samples gratis. All sizes and colors.

JOHN C. MEYER & CO.

MILLS AT LOWELL, MASS.
Offices: 621 Broadway, New York, N. Y.
77 Summer St., Boston, Mass.
Address all correspondence to our mills, Lowell, Mass.

Carriage Mechanics

Desiring to improve their present Condition should attend the

TECHNICAL SCHOOL

FOR

Carriage Draftsmen and Mechanics

SUPPORTED BY THE

Carriage Builders' National Ass'n.

The object of the School is to teach men to design vehicles and make working drawings, and to otherwise facilitate their work in the shop. Only those men employed in carriage or automobile building or their accessory trades are admitted to its privileges.

The classes are conducted in three divisions, viz.: Corresponding, Day, and Evening. The former is open during the entire year, while the day and evening classes are in session only from October 1st to April 1st.

The tuition is moderate.

For prospectus and full particulars, write to the instructor,

ANDREW F. JOHNSON,
18 West Forty-fourth St.,
NEW YORK CITY.

JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

The George R. Carter Co.

Manufacturers of

AUTO STRAPS A ESPCIALTY

CRANK STRAPS, HOOD STRAPS, TOP STRAPS AND TOOL BOX STRAPS.

JOBBERS IN

TRIMMING LEATHER, TOP LEATHER, LEATHER CUT TO PATTERN FOR CUSHIONS OR TOPS,
SHAFT LEATHERS, SHAFT STRAPS, POLE STRAPS, ETC.

CONNERSVILLE, INDIANA.

ESTABLISHED 1886.

Correspondence School of Carriage and Motor Carriage Drafting

A thorough, practical tuition is given through this correspondence school. The theory and practice of construction, bookkeeping, perspective. Many men now hold good positions through taking the courses of instruction.

Principal, THOS. MATTISON,
Hillside Avenue, Bitterne Park,
Southampton, England.

Author of "The Coach Body Makers' Guide," $3.00; a practical treatise on "The Suspension of Carriages," "Bookkeeping," and other carriage building works.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

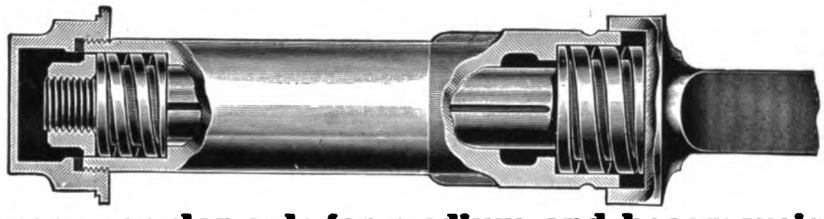
Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES } **C. T. RAYNOLDS & CO'S** { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES }

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

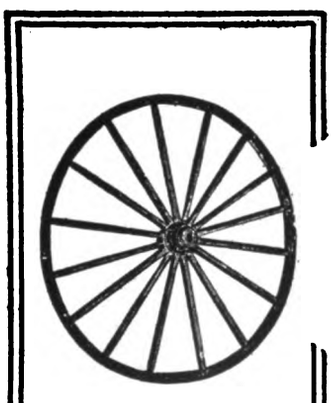
FOR PARTICULARS WRITE

DALZELL AXLE CO., South Egremont, Mass.

BOLTS Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.



Time Has Told the Story!

Service and satisfaction always follow our rolling stock

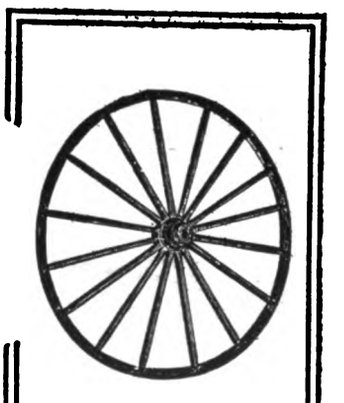
WHEELS

ALL KINDS—BEST QUALITY

Also RIMS and SPOKES

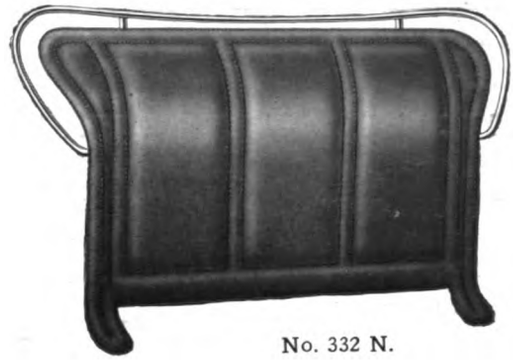
The Eberly & Orris Mfg. Co.

MECHANICSBURG, PA.



Digitized by Google

WING DASHES

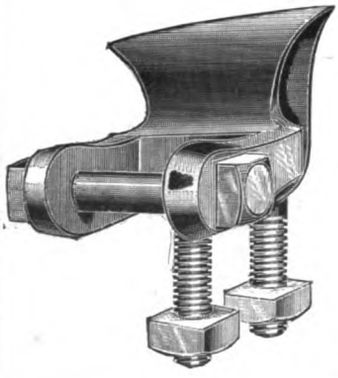


No. 332 N.

BUFFALO, N. Y.

TROY, OHIO.
CINCINNATI, OHIO.
ST. CATRARINES, ONTARIO.

McKINNON DASH COMPANY.



Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips 5/8 or 3/4 width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

Catalogue "H" and Prices on Application.

COLUMBUS BOLT WORKS, Columbus, O.

HIGH-GRADE VEHICLE

WHEELS

SARVEN, WARNER COMPRESSED BAND WOOD HUB

All materials are carefully selected and thoroughly seasoned. Prompt Shipments. Send for Catalogue and Price List.

UNION CITY WHEEL COMPANY,

Union City, Indiana

Digitized by Google

The Hub

THE NEW YEAR is unfolding with much that encourages and satisfies in all directions. The vehicle builder faces the prospect of a demand that will test his ability to satisfy. Not only the vehicle of lesser cost, but even the carriage of luxury is again prominent.

There has been nothing in the automobile industry deterrent to the carriage builder. The shows, as they recur, give the most emphatic evidence that the carriage body builder is fast becoming the master of the situation, and by his co-operation is lifting automobile building onto a plane where elegance and suitableness of design counts.

Oldest Carriage Journal in the World

1858 1910

CURLEY-N.Y.

Vol. LI. No. 10 JANUARY, 1910

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

RIGHT VARNISH MAKES
Satisfactory Vehicles

CARRIAGES. buggies and other vehicles that satisfy must not only be well made, they must also be **well varnished.** Your reputation and your profits depend upon the varnish you use. You can make no mistake by using STANDARD VARNISH WORKS' VARNISHES, they are the standard of excellence because they represent a **Unity of Color, Lustre, Working, Drying and Wearing Properties.** Of those not using these varnishes we ask for an opportunity to prove the validity of our claims.

STANDARD VARNISH WORKS

CHICAGO NEW YORK LONDON BERLIN BRUSSELS

INTERNATIONAL VARNISH COMPANY, Ltd., TORONTO, CANADA

CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

ESTABLISHED IN 1791

Wm. Harland & Son

Beg to announce that they have removed their United States Headquarters to Genesee Street and Erie Canal, Buffalo, N. Y.

Wm. Harland & Son

IMPORTERS OF

Harland's English Varnishes

FOR

Coach and Automobile Builders, Railway and Street Car Finishing

AND MANUFACTURERS OF

High Grade Varnishes for all Purposes

FACTORIES:

MERTON,
LONDON, S. W.,
ENGLAND.

GENESEE STREET and
ERIE CANAL,
BUFFALO, N. Y.

400 EASTERN AVENUE,
TORONTO,
ONTARIO.

Western Branch, 40 Dearborn Street, Chicago. C. H. Schooley, Manager.

General Manager United States and Canada, H. Hagger.

Please mention "The Hub" when you write.

Digitized by Google

JOHN W. MASURY & SON.

Originators of

Superfine Coach and Automobile Colors

Acknowledged the Standard for Fifty Years

AND MANUFACTURERS OF

Fine Carriage and Automobile Varnishes

New York, Chicago, Minneapolis, Kansas City

WILLEY'S

COLORS

The RECOGNIZED STANDARD

C. A. WILLEY CO.

COLORS GRINDERS

and Manufacturers of Specialties in

CARRIAGE, AUTOMOBILE AND CAR

PAINTS

COLORS, VARNISHES, ETC.

HUNTER'S POINT, NEW YORK CITY

LAMPS

We have some open time for a few new lamp contracts —IF you want a high-grade lamp at a moderate price.

Lamps for any fine closed vehicle.

The English & Mersick Co.

New Haven, Conn,

Digitized by Google

1910 IMPROVEMENTS IN SWINEHART TIRES

MEAN MORE MILEAGE, LESS EXPENSE, NO DELAYS, DOLLARS SAVED

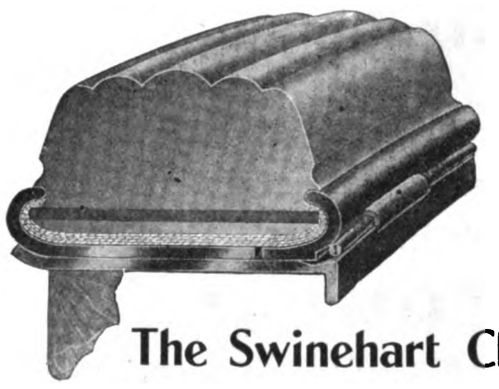
CONSIDER! Mr. Manufacturer, the advantages of our line before leaping into the uncertainty of 1910 season with an old-fashioned, inefficient, unimproved, inconvenient tire equipment.

CONSIDER! Mr. Manufacturer, that truck owners in general are no longer buying tires because they are cheap.

CONSIDER! Mr. Manufacturer, that more Swinehart tires are used in New York and Chicago (the great commercial car fields) than any other make, because they give from 20 per cent to 50 per cent more service, and are more convenient to apply.

CONSIDER! Mr. Manufacturer, every time your customers are forced to lay up their cars for repairs to tires or renewals, it costs them from $10 to $50 per day, and consider that Swinehart quick detachable rims eliminate all such delays.

SAVE YOUR CUSTOMERS MONEY AND IMPROVE THE REPUTATION OF YOUR CAR BY USING SWINEHART TIRES



FLANGE RIM FOR WOOD WHEELS

The success of our quick detachable rims during past seasons has demonstrated that truck owners appreciate this feature.

Our clincher tires with improved quick detachable flange rims make it possible for an amateur to change tires in thirty minutes. The nuts on one side are simply taken off, one flange removed, old tire slipped off, new one put on and flange replaced. No tools other than wrench and a few bars required.

QUICK DETACHABLE RIM FOR STEEL WHEELS

The rim shown at left has revolutionized the truck tire business and demoralized competitors. It has placed the truck tire manufacture on the same high plane of perfection as tires for pleasure cars. This rim is furnished for all steel wheels.

Not only have our tires and rims been improved constantly, but facilities improved and capacity enlarged in order to meet the constantly increasing demand for our product.

MOTOR BUGGY SPECIAL

Expressly designed for motor-driven cars—not a tire for horse-drawn vehicles. Wide tread gives increased traction. Large size, beaded tread and concave sides add resiliency and durability. Made endless, no joints, easily applied by anyone.

The Swinehart Clincher Tire and Rubber Company.

Akron, Ohio

NEW YORK, 875 7TH AVENUE
CHICAGO, 1720 MICHIGAN AVENUE
DETROIT, 850 Woodward Avenue
ST. LOUIS, 2109 N. 9th
SAN FRANCISCO, 503 Van Ness Avenue
INDIANAPOLIS, IND., 809 Mass. Avenue

DURABLE **RELIABLE**

Mander's English Varnishes

MANDER BRO'S, Wolverhampton, Eng.

Works Established 1803

A. E. LOUDERBACK

Agent

118 Hudson St. New York.

CARPENTER-MORTON COMPANY

Sole Agents for New England

BOSTON **MASSACHUSETTS**

BRILLIANT **ECONOMICAL**

Digitized by Google

The Way to Begin is to Begin
CHOOSE

TRADE **VALENTINES** MARK

USE

Established 1832-1910. Seventy-eight Years Young

VALENTINE & COMPANY

New York Chicago Boston Toronto London Paris Amsterdam

82 Years' Experience in Every Can

E.S. 1827 & CO.

Edward Smith & Co.

CARRIAGE VARNISHES

Everything from the
Bare Wood to the Finishing Coat.

CHICAGO **NEW YORK**

HOTEL EARLINGTON

55 WEST 27TH STREET
Near Broadway, NEW YORK

This well known, absolutely fireproof hotel, after being entirely renovated, redecorated and fitted up complete with new plumbing has now reopened.

Rates from $1.00 and Up
With Bath, $5.00 and Up

Special rates by the season or year for permanent guests.
A special feature will be the cuisine, both in the dining room and in the new cafe for ladies and gentlemen. A la Carte and Table d'Hote.
Hotel under the management of

GUERNSEY E. WEBB
Formerly of the Ansonia.

RUB ——— RUB ——— RUB

THAT'S THE EXPERIENCE SOME PAINTERS HAVE WITH A POOR RUBBING VARNISH. THEY RUB TILL THEIR HEART ACHES ONLY TO HAVE THE VARNISH SWEAT, OR ROLL UP UNDER THE PAD.

XX Diamond Rubbing and Hard and Quick Drying Rubbing "A"

DRY HARD TO RUB IN TWO DAYS, WITHOUT SWEATING, ARE TOUGH AND THE BEST FOUNDATION FOR FINISHING COATS.

MADE BY **MOLLER & SCHUMANN CO.**

MARCY AND FLUSHING AVES., **BROOKLYN, N. Y.**

Please mention "The Hub" when you write.

Digitized by Google

Goodrich
Solid Rubber Tires

Internal Wire Carriage Tires

Side-Wire Tires for Heavy Carriages

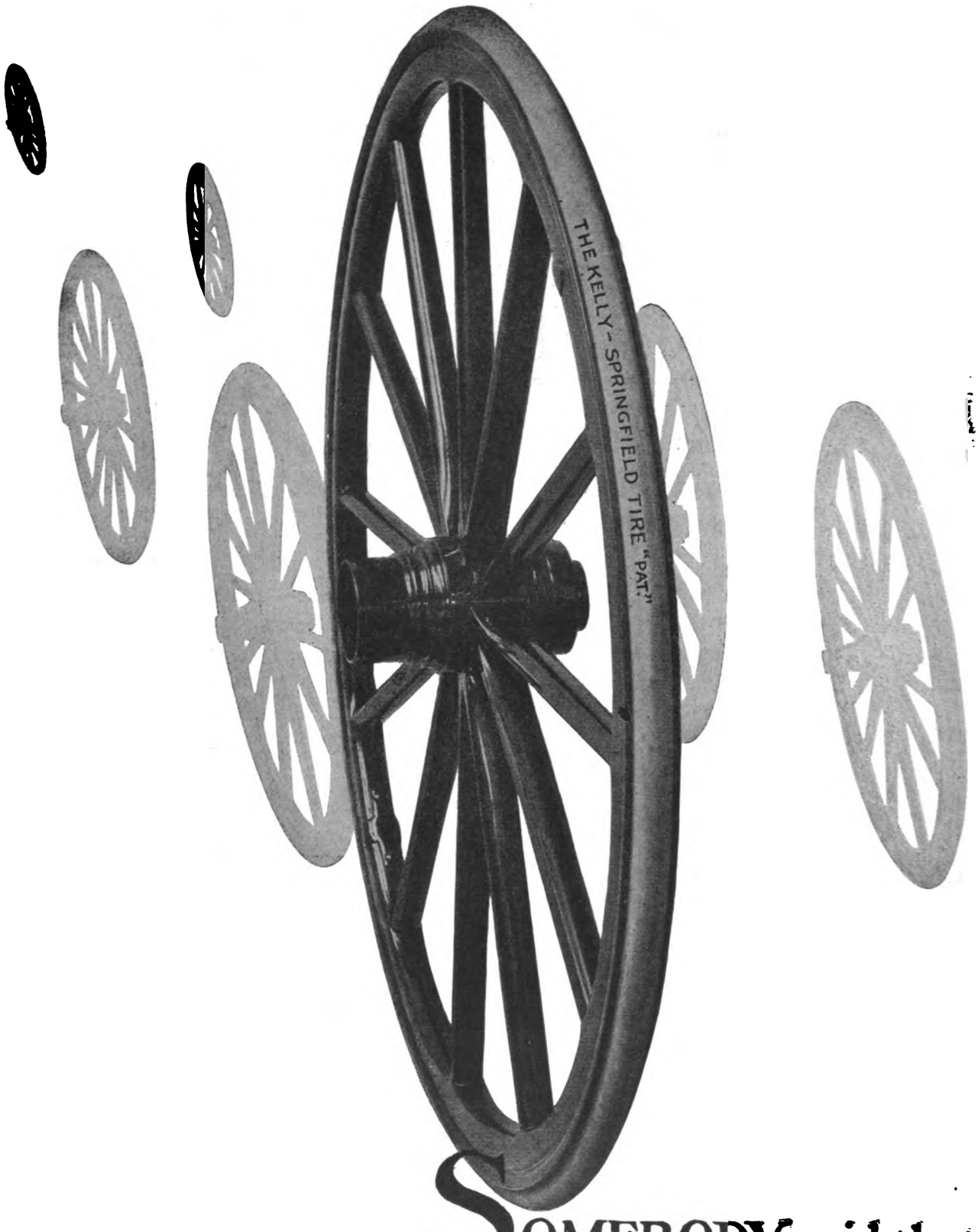
These products represent fifteen years of consistent development, and co-operation with customers. They have been distinguished always by the

Mark of Quality

Copies of the 1910 Catalogue will be gladly sent on request.

The B. F. Goodrich Company
Akron, Ohio

Digitized by Google



SOMEBODY said that you never know how good a thing is until you see the imitation. WE say you never know how bad its imitations are until you see the

Kelly-Springfield Tire

Digitized by Google

The Hub

Copyright, 1910, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. LI. JANUARY, 1910. No. 10.

THE TRADE NEWS PUBLISHING CO. OF N. Y.

Publishers of THE HUB

J. H. WRIGHT, *President.* G. A. TANNER, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

JACOB H. KLEIN, *Technical Editor.*

REPRESENTATIVES:

J. G. TANNER C. E. HASBROOK JULIUS P. PREYER

Other Publications of Trade News Publishing Co.:

HARNESS (monthly) .....per year, $1.00

AMERICAN HARNESS AND SADDLERY DIRECTORY (annual) .....per copy, $4.00

THE HUB is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of TRADE NEWS PUBLISHING CO.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

FRANCE.—L. Dupont, publisher of *Le Guide due Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

GERMANY.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

ENGLAND.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

That Swan Song.

When things are never what they seem, the possibilities for confusion increase several fold.

When President pro tempore Connolly made his address to the carriage builders in convention at Washington, his metaphorical reference to the vocal antics of the swan at the time of shuffling off its mortal coil, was in no wise intended to characterize the supposedly critical position of the horse-drawn vehicle builder, but was rather a joking reference with poetic trimmings, to the state of being of a few builders of fine work of the most expensive styles. He spoke from personal experience in a circumscribed field.

No one who listened to a very pleasing address replete with the most satisfactory views and statistics as to the present and future well-being of the vehicle builder, had any but cheery feelings of what was to come to the builder in the year of grace, whose threshold we have just crossed.

But who could think that the callow young reporter "in our midst" was mixing his gray matter in the effort to get some jewel of speech that would scintillate in a "story" springing from his unbaked thought? Such an one could understand the possibilities of a swan song, though all else was cloudy and confused to his understanding.

Hence the "song' was soon echoed far and near, and even the editor in his easy chair, found it a congenial theme, because it was something he didn't understand, thus it was something that would furnish conclusions without premises, than which there is no pleasanter word-building operation, as it calls for no thought, merely comment.

The vehicle builder, whether his output is horse-drawn or self-propelled, is in a state of quasi business beatitude this year, as his contribution to the world on wheels is to be larger than ever, and he has taken counsel with his neighbor, and intends to get a little nearer to what the work is worth than has latterly been the case.

That kind of "song" is more like the Italian opera kind that comes at so much per note, in about six figures, and has nothing dead or swanlike about it.

Even the auto builder has seen how pleasing can be the taste and co-operation of the vehicle body builder when it comes to putting something on the chassis that will look like a real vehicle, in place of an unprofessional tin water bath, and the motor car to-day owes most of its elegance in design, above the running gear, to the good taste of the carriage maker.

With characteristic broadmindedness, the carriage man, through the technical school maintained by his voluntary contributions, has even supplied the automobile maker with the brains, ability and good taste that has been so pronounced in its good effect on the automobile top hamper.

Hence if the carriage builder is to be considered in the character of a moribund swan, the melody is the most beautiful ever, and, by the way, is being settled for in coin of the realm by the entranced listeners!

Fact is, body building is that and nothing else, whether for one kind of vehicle or another. The inspiration for its curves and sweeps will always come from the best sources of design.

The buggy, that convenience of the millions, has reached about the highest stage of its development, and probably represents more value for the price than anything else made of wood and iron, covered with paint, on the face of the globe.

So the swan song of the carriage man is a very jolly roundelay, and long may it so continue!

The Vagaries of Fashion.

The ordinary observer of people and things need not be a philosopher to note how close is the resemblance between man and his simian ancestor. It hardly needed the genius of a Darwin to leaborate the hypothesis.

The above somewhat superior (?) reflection comes to us after a consideration of the career of the high-wheel motor buggy.

Here was a vehicle remarkably well adapted to its purpose. Its high wheels cleared obstructions with the

Digitized by Google

least jar, and with the most comfort to rider and machinery. It could negotiate mud without skidding, and, in fact, it had many useful traits to recommend it, among them comparative low cost.

But it had the bad taste to really look like what it purported to be—a buggy.

You couldn't speak of its tonneau or its limousine, and its wheels were vulgarly comfortable, so there were few faults to discuss in the auto jargon of the day.

It was soon made manifest it wouldn't do. The farmer boy and his best girl had to have the real thing in red paint, and with all the bumps low wheels could supply. Were they to be set down as jays or guys, and wheat one dollar twenty the bushel? Well, hardly!

So a very useful vehicle had to be put to one side temporarily, to be considered more favorably in the future.

Meantime the idea works out in the shape of light delivery wagons most acceptably, to those who can get along comfortably without wearing goggles when delivering eggs, butter and the weekly wash.

Business Motor Wagons.

The trend of heavy traffic in the cities, so far as observed, has not set strongly towards motor trucks.

The increase bears no percentage relation to the increase of the passenger vehicle.

Wherever the sporadic manifestation of the motor truck is most noteworthy, the initiative is looked for and found coming from some corporation or large company that can afford to overlook the up-keep expense, or pass it along as a festoon decoration on the shoulders of the shareholder, that patient "goat" who is used to ruminating over items of fixed charges—which he doesn't comprehend!

Fact is, there are many drawbacks to the motor truck. The hard tires jar the machinery out of alignment if speed is undertaken. If air tires are substituted the expense stares the up-keep account in the face. If the truck cannot go at least twice as fast as the horse-drawn proposition, then expense becomes pronouncedly bad for the gas truck.

If the cylinder cooling device is of the water system, then again the troubles that are the outcome of freezing when the machinery is inactive cause loss of time and more expense.

The repairs are very naturally more numerous than can be the case with the horse-drawn truck.

There is yet a little experience to be acquired to make everything satisfactory from the point of view of economical working, but no doubt the aim will be achieved in time.

INSTRUCTIONS ABOUT CUBA.

Those who consider approaching the Cuban trade through the medium of samples and traveling representatives should give attention to this advice from J. L. Rodgers, our Consul-General in Havana:

"It should first be understood that the Cuban customs law makes no special provision for the entry of small amounts of goods designed to serve as samples, except that if the importer at the time of entry declares intention of re-exporting the same, and complies with the requirements as to the identification of each article after the payment of full duty, he is allowed a rebate of 75 per cent. of the duty upon re-exportation-and-upon re-identification of the same, provided that this re-exportation is affected within ninety days from the time of entry. However, to be entitled to this privilege and refund, the samples must enter Cuba in the baggage of the salesman, and must not exceed $500 in value. All this takes time upon entering Cuba, but close adherence to the process will finally get the salesman in and out of Cuba with his samples.

"There are some other things, however, which the salesman should remember and do before coming to Cuba. If from the United States he should have his invoices of samples certified by a Cuban consular officer, thus saving his reciprocity treaty reduction on the dutiable value and avoiding double consular fees upon arrival at the Cuban port. Furthermore, salesmen can save their own and official time, as well as a great deal of trouble, if they will include in their invoice of samples such details as the gross and net weight of packages, gross and net weight of each item, itemized details of the contents of each package, and an itemized description of the material entering into the goods; that is, for instance, as to whether the samples are all leather, or leather and cotton, or leather and silk, as the case may be. This may seem a deal to do, but it is valuable preparation.

"That which seems to be good advice to American salesmen, especially when entering a busy port of Cuba, like Havana, is to employ the services of a reputable custom house broker, who, understanding the details as well as the language, can usually secure entry or clearance of samples with more celerity than an American, and can do it probably with not much more expense to his employer. The representatives of European commercial houses are usually men of long experience in Latin-American countries, and therefore familiar with custom house processes. The seeming ease with which these transact their business is due to their knowledge as to how to enter and how to clear their samples.

A NEAR-TEXTBOOK.

"Self-Propelled Vehicles," a practical treatise on the theory, construction, operation, and care and management of all forms of automobiles, has just been issued in revised form, and marks the tenth edition of this very important volume. It is by James E. Homans, A. M.

The scope of the book embraces about all the information the beginner can wish to acquire. It is equally instructive to the one who knows more than the neophite, but does not know what he knows with the accuracy of complete understanding. There is no part of the mechanism of the motor car that is overlooked. The abundance of illustration serves to make even intricate details clear with the help of the very able handling of the author.

The motor cycle is equally treated; in fact, as stated, the book is fairly to be considered a textbook on the subject in all its details, even to the matter of repairs. It is a very necessary publication for all who have anything to do with motor cars for profit or pleasure.

It is published by Theodore Audel & Co., 63 Fifth Avenue, New York City.

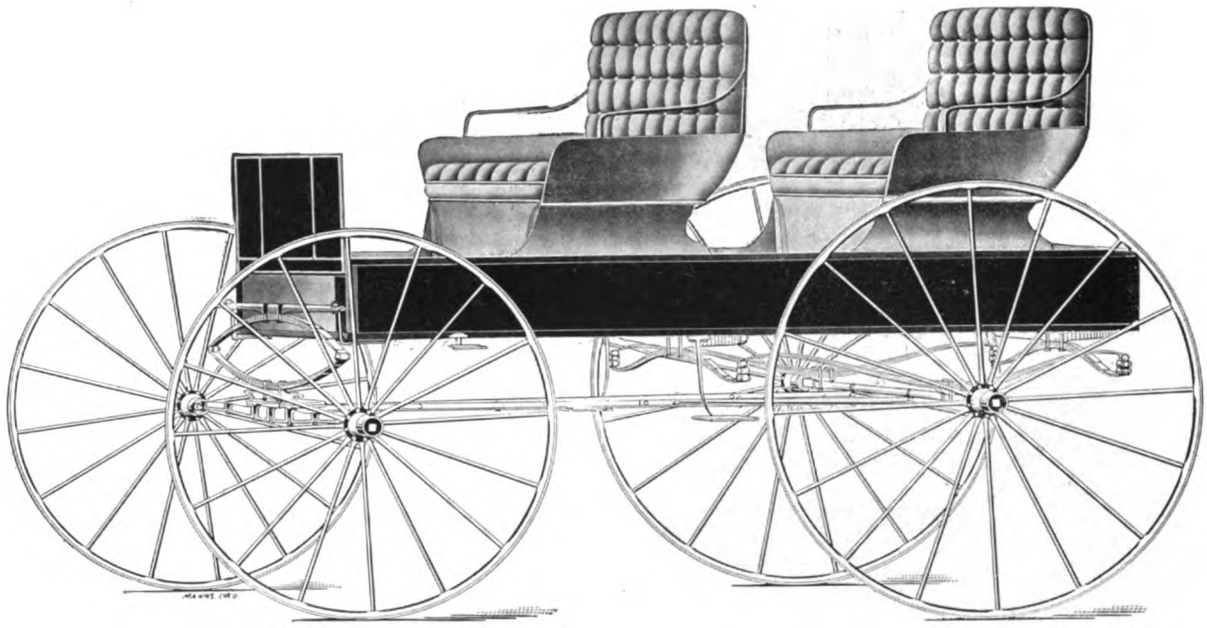
FARM IMPLEMENTS GOING HIGHER.

Such is the assertion of W. S. Thomas, of Springfield, Ohio, secretary of the National Federation of Manufacturers, who addressed the Midwest Implement Dealers' Association. He attributes the coming increase in prices to the shortage of the supply of materials. "There was never a time when it was harder to get materials for the manufacture of implements," said Mr. Thomas. "The steel mills are swamped with business for the next eight months, and it is a fact, that you will have to hurry if you want machinery. The situation will not improve soon and you can expect a raise in prices by summer, at any rate. It ought to be made the first of the year, if we were doing business like the steel mills do."

Hens & Kelly Co., of Buffalo, N. Y., have incorporated for $800,000. Among other objects, is the building of vehicles. M J. Hens, P. J. Kelly and A. West are the incorporators.

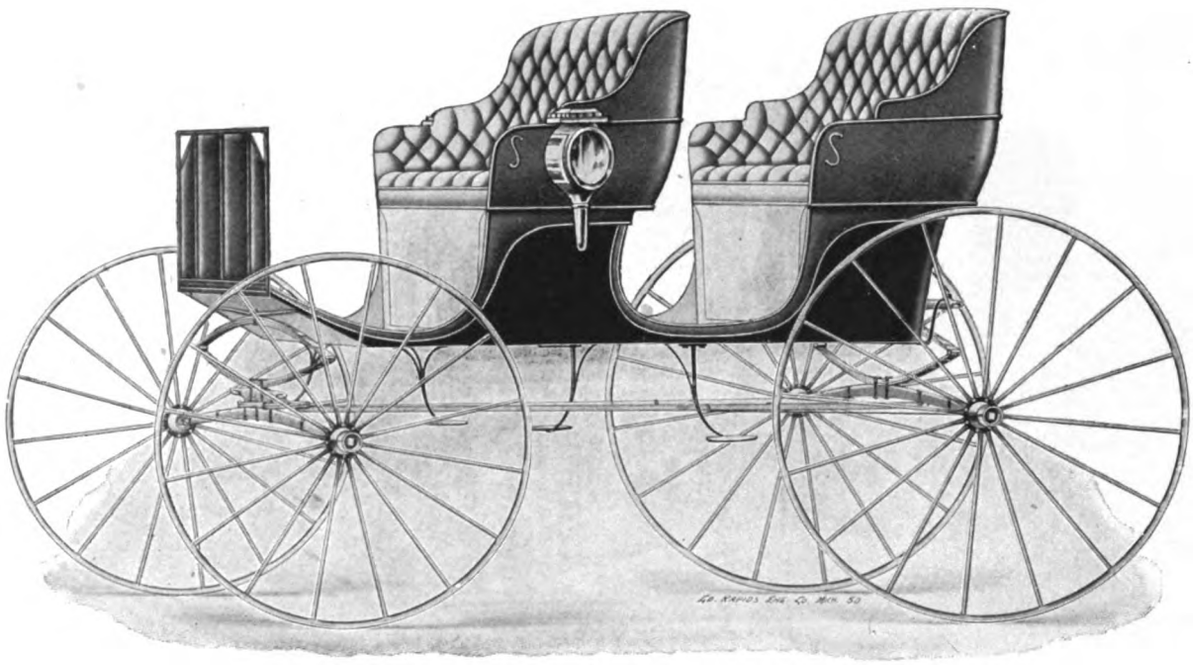
Digitized by Google

Illustrated Carriage Section, January, 1910.



LIGHT HALF-PLATFORM SPRING WAGON.

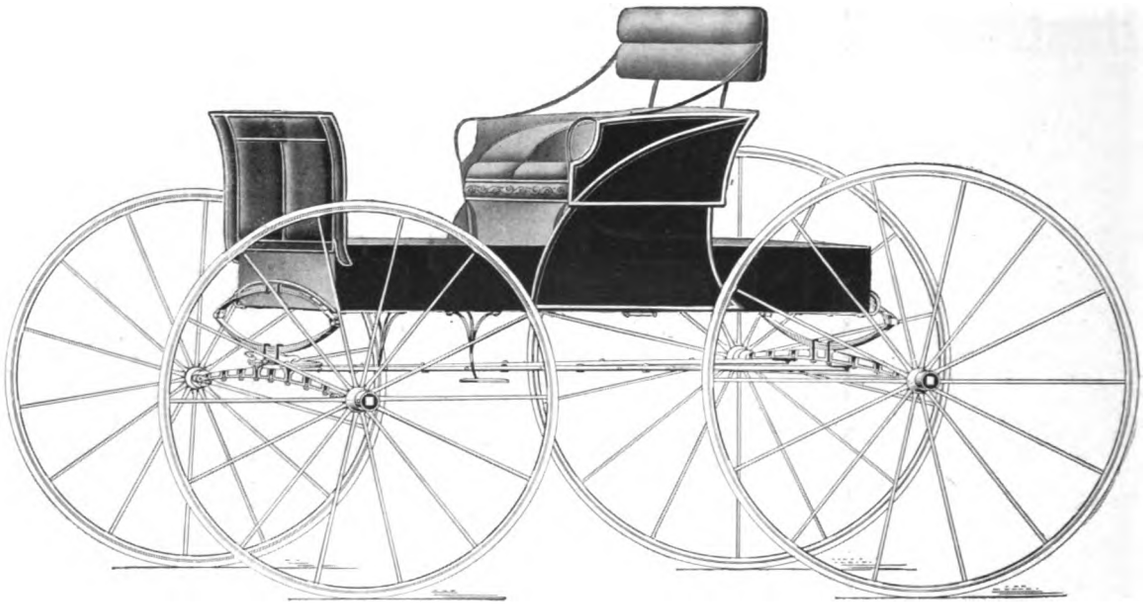
Built by the Gem Buggy Co., Carthage, Ohio.



LIGHT OPEN SURREY WITH AUTO SEATS.

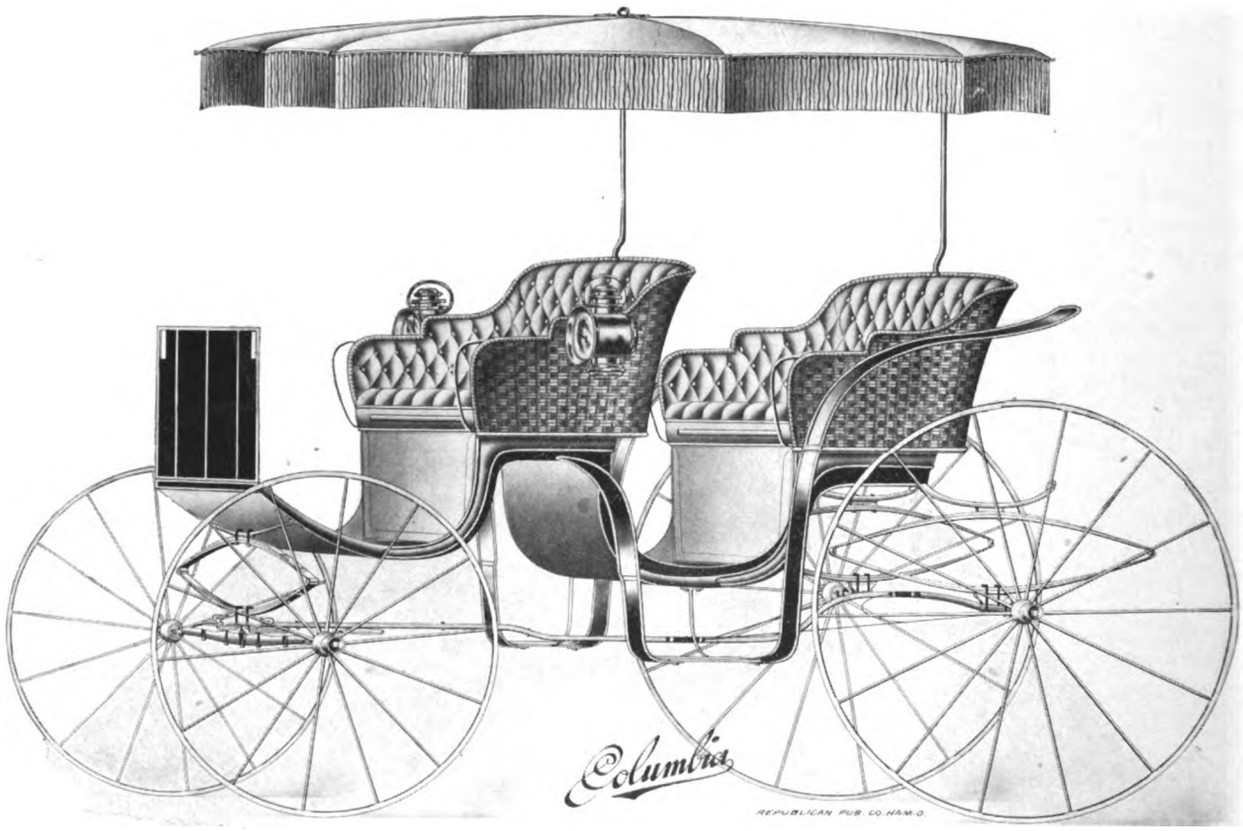
Built by Sechler & Co., Cincinnati, Ohio.

Digitized by Google



OPEN DRIVING WAGON WITH DICKEY SEAT.

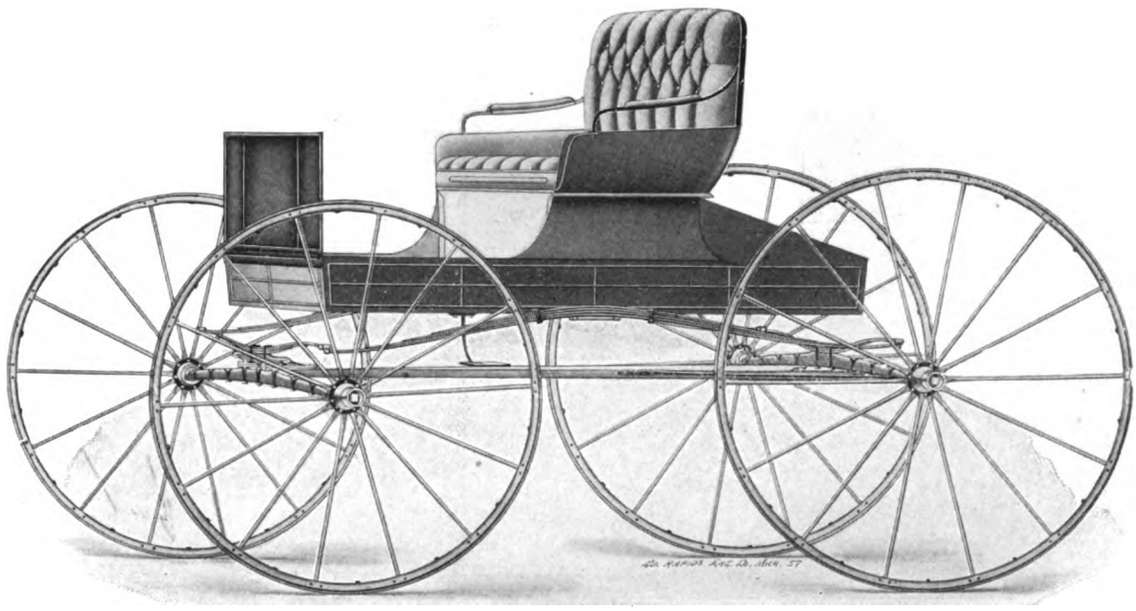
Built by the Jewel Carriage Co., Carthage, Ohio.



LIGHT BASKET-SEAT CARRIAGE.

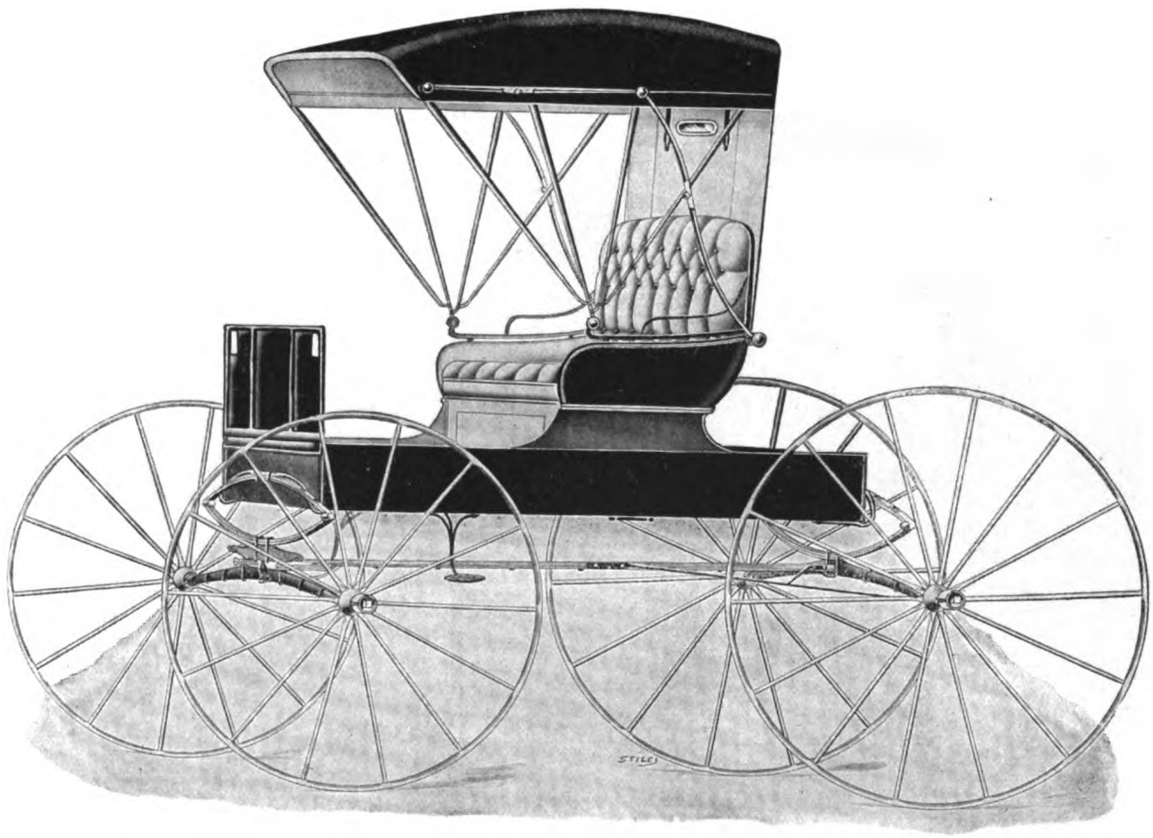
Built by the Columbia Carriage Co., Hamilton, Ohio.

Digitized by Google



PACIFIC COAST BUSINESS WAGON.

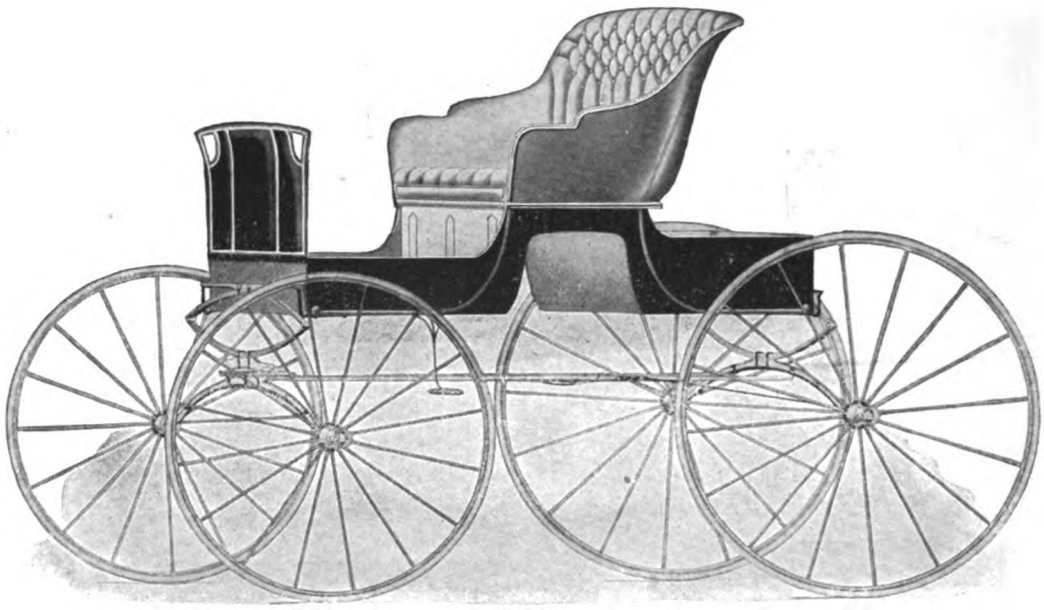
Built by the F. A. Ames Co., Owensboro, Ky.



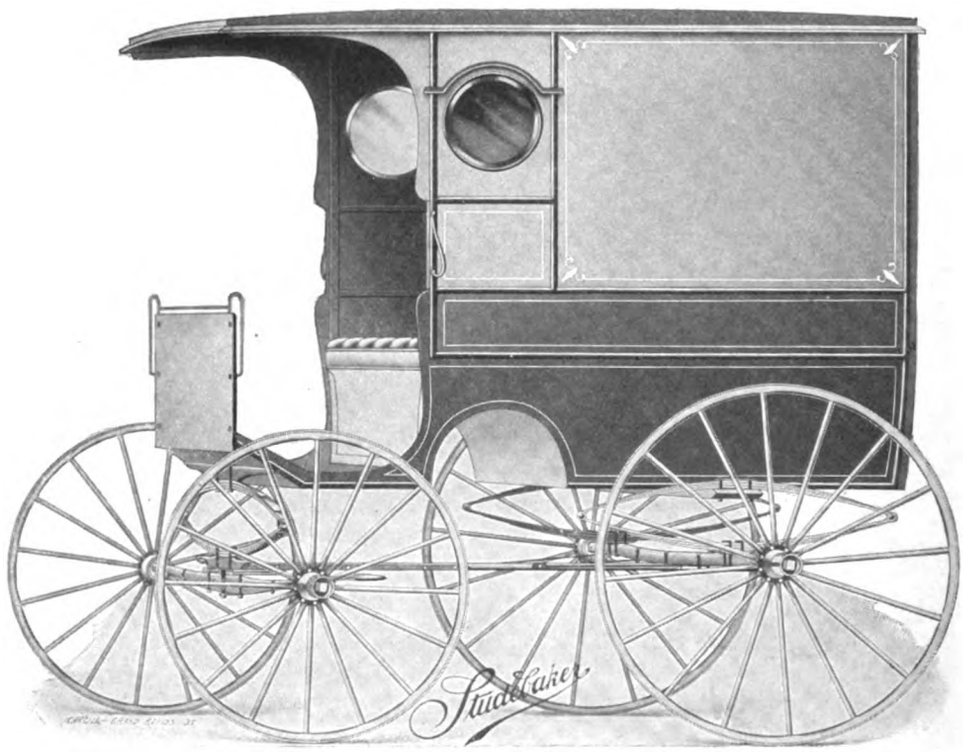
SINGLE REACH BUGGY.

Built by Fuller Buggy Co., Jackson, Mich.

Digitized by Google



LOW-WHEEL AUTO SEAT CUTUNDER BUGGY.



CUTUNDER DELIVERY WAGON.

Built by Studebaker Mfg. Co., South Bend, Ind.

Digitized by Google

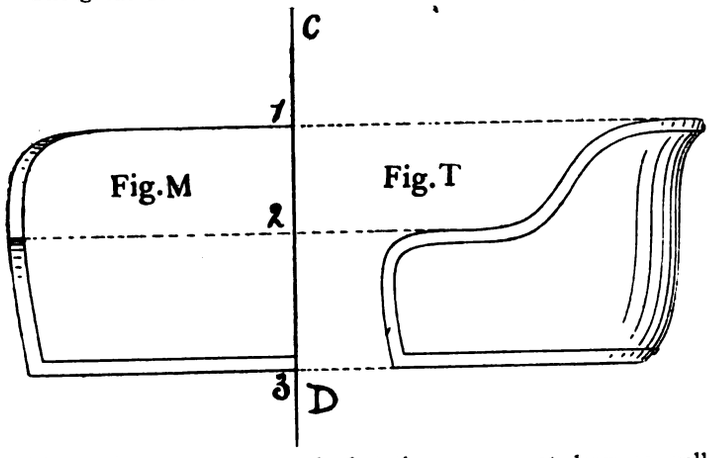
Wood-working and Smithing

PRACTICAL LESSONS IN LINEAR CARRIAGE DRAWING.

In a recent issue of The Hub on this subject of practical carriage drawing, the theory of blending curves of degree and of their connecting points to straight lines was dealt with—and the laws governing their correct association explained.

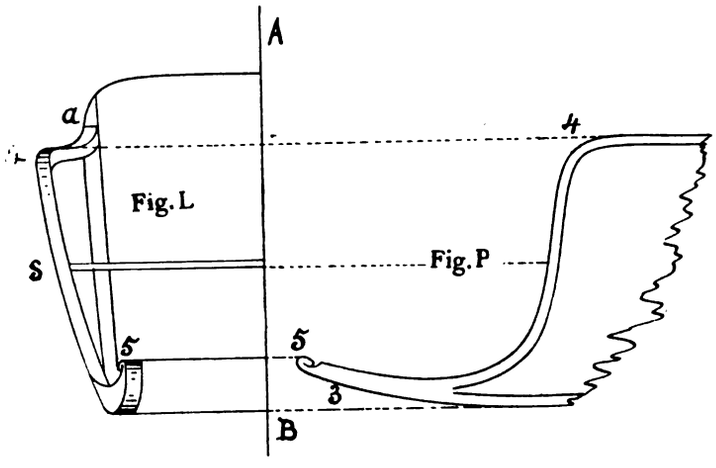
A carriage draftsman requires a solid tuition in linear art, and its application to practical design before he strikes into the accessory elaboration of decorative draftsmanship.

The great defect in the contrast of the carriage of one builder



with another, is not so much that the one cannot draw as well as the other, but that the one has not got the cultured grasp of making true lines, and, therefore, cannot formulate them in design—nor originate—with such striking power as the other can.

It will be more readily grasped what is meant in these lessons if it is explained here—that should a body maker in dressing up his stuff for a body neglect to face and square up the bars of framing true, whether straight or curved, the necessary squarings and bevels, which the framing may have to be worked to, will produce a figure of distortion when the body is framed

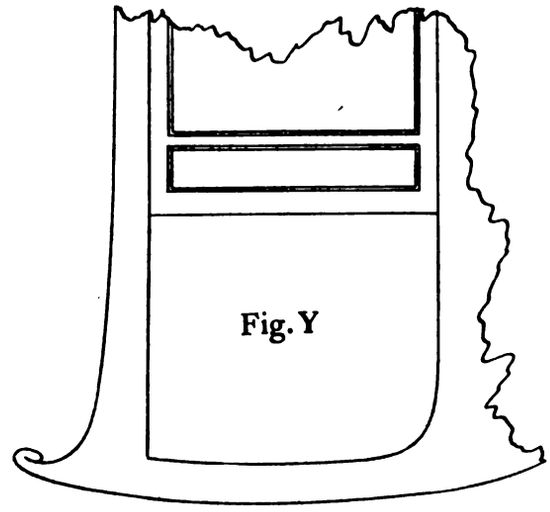


together, and every practical body maker knows that inaccurate dressing up of framing produces inaccurate body making in the finished work.

In designing, the law of lines must be conquered as the basis to full work, and unless this is thoroughly done no carriage can be designed with truth. With the richly artistic mind in combination with the ability of the workman—good work is achieved because of its sensitiveness to connection and degree, as the result of which true craftsmanship is thrown off in the effort.

By a knowledge of the law of lines we are able to harmonize in contrast, and gradually glide from one degree of outline to another, without immediate suddennness in the fashioning of the public taste, and we thus keep traveling from one pastureland to another, each working in a cycle of returning sameness. We are thus constantly traveling backward and forward, with the same thing in quickened and lessened formation—and producing and reproducing forms of period in which one form of outline covers the other in varied rotation.

In elbow lines, the fashion creeps from very quick corner curves down to straight lines, which harmonizes with angular design. The quick curve of elbow is of the chariot and clarence period, and has found a lodging as a return style in the elbow lines of limousine and landaulette motor bodies. The difficulty



in correctly drawing this line has been spoken of in the earlier diagrams—4 and 5—and the points that govern a true elbow line of whatever degree of corner curve fully explained.

Fig. T shows the outline of a motor seat quarter-side. The back line of the quarter is edged, and the elbow line double return curved. This is a difficult line to draw cleanly and gracefully, while the correct width of moulding is also difficult to keep in the same line of harmony. The front of the quarter may have to run into a return line in the body pillar, or flow outward—in whichever way the line must be finely blended to the receiving line in unbroken continuity.

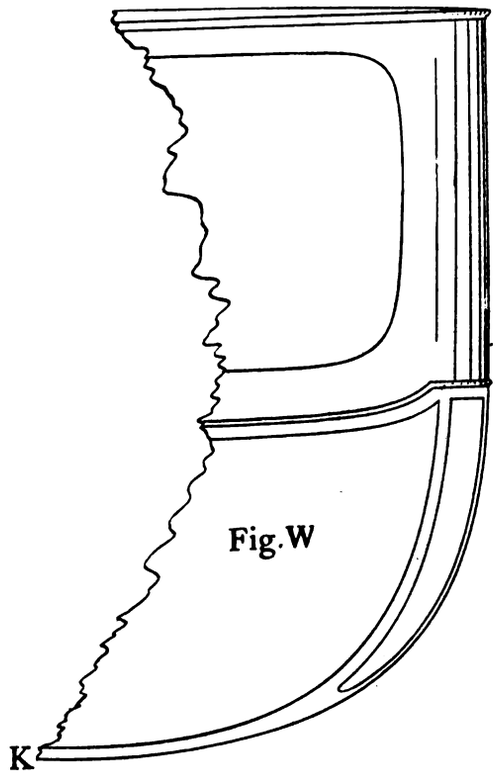
Fig. M shows the front of the seat and quarter in projection. This is an apparently simple operation, but it is essential to know where the lines in projection bear the exact points in the elevation, and to so delineate them as to show themselves clearly up as points of width and their positions in the elevation. On making the elevation drawing, drop the vertical line C-D and project the top and bottom points of the quarters depth, together with the elbow point 1, 2 and 3, and on these lines set off the width of the body across the quarter and seat, and draw them in as in the figure showing the parts of rounding on the pillar tops 1 and 2.

Fig. P shows the front elevation section of a motor body of open design. The controlling line is of a quickened and flowing curve from point 4 to 5 at bottomside eye. The bottomside line 3 is of a faint flow on to the sharper curves of pillar and

Digitized by Google

quarter line of body, but cut off in section for illustrative instruction.

In drawing the front half of section Fig. L, it is more difficult than the previous lesson in Fig. T and Fig. M, because of its greater flare out from the body's contraction. The elevation Fig. P being made, the plumb line A-B is dropped, from which is measured off the various points of width of the body across the points A-4, S-5, which shows the back of body at elbow point, top of front of pillar which is the greatest width of the body, the width on seat line and across top of bottomside bracket at eye. The diagram L shows how the curve lines of the front of the body are positioned off the elevation. It is an important



lesson in practical body making, because these points are practical in the body's construction in showing the contour of its formation from the front view. The illustrations explain a difficult lesson in practical carriage drafting, and how the foreshortening of curves in a frontal position should be followed from the elevation points.

Fig. W shows the back section of a light limousine body with round corner. It will be seen that the controlling lines of the body are from a faint corner curve on the top quarter, as the source from which the bottom quarter corner lines draw their firmness in continuation on to a fainter curve in the bottomsides termination. The corner of the body has two controlling lines which distinctly define the rounding space of the corner by throwing the moulding up as its fullness, the back moulding being shown in thickness from the boxing of the corner panel.

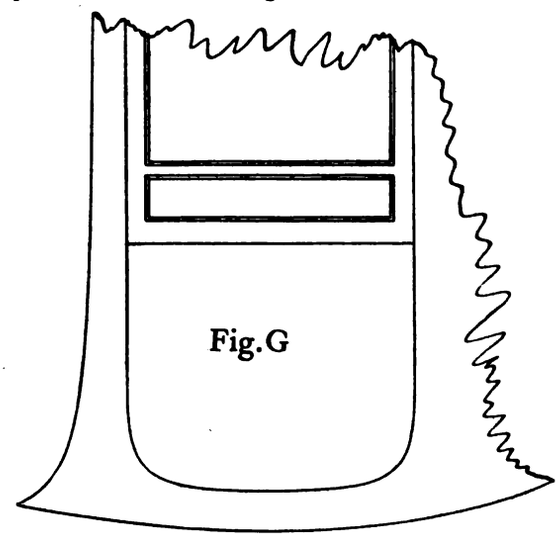
The curve of the elbow point is faint to harmonize with the long flowing lines of the corner and quarter curves. The line and jointing of the metal bead is also shown above the moulding. This provision should be made in laying out an elbow line, and the top back rail of the body, so that the mitre of the beads joint may be angled to make a clean length of two faces of the bead in the joint. This is often neglected to the defacement of the high finish metal beading gives the embellishment of a body's outline by the beader. Fig. N shows the corner curve of the body from the roof to the elbow, from which it finishes on the bottomside line with a conical contraction.

This style of finish is very widely used in motor body design of the limousine type, while it is also shown on deep quartered victoria bodies, and other horse-drawn carriages of this formation. The side light in the top quarter is made as large as possible, but it should be observed that the sides of the light should be slightly hollowed in running into the corner curves. This is often neglected, which makes the side lines appear rounding and look abrupt to the eye—as has been spoken of in dealing with elbow lines. The rounding of the corner of the top quarter by parallel lines is also a lesson in this particular of draftmanship. It will often be the experience of the young draftsman that, what is wanted above all others in a working drawing, is clearness of what is required, and being able to shade rounding surfaces, and hollows as well, will very materially help to make what is wanted more clearly understood than when this element is left out; so that this power of making things clearer where it is imperative to do so is a great help to the draftsman's drawings being understood by the workmen who have to work to them.

In the designing of motor bodies there has been brought out a great diversity in style, which has again demanded different lines of construction to work them out. In the designs of limousine and landaulette bodies the lines of the door are frequently made a scapegoat of in the matter of harmony.

Fig. V shows a good design of door in that the back corner curve leaves the body strong at that particular part, while the door is usually deep enough to allow the glass frame to fall to its full depth without encroaching on the corner curve. Thus the door is worked to a quick and live cut to the body's good appearance, and in harmony with the chariot pillar.

Fig. G shows a door with both corners rounding, but it does not require a keen linear insight of the science of carriage de-



sign to taboo lines of such discordant running, for they convey a crushing effect to the body's outline as a principal, while they are at variance with the controlling lines of the design, whether in a limousine or open car body, and are, therefore, to be avoided because they recede from and are in opposition to the law of principality.

Fig. H shows the door with curved corners. The shutting side is made to follow the line of the front of the pillar at point S. But it does not require a coach maker to be gifted with the artistic genius of a Raffel to see the absurdity of such a distortion in outline, for it might as well be claimed as a distinguishing mark of facial beauty to cultivate a side swelling on either side of the jaw of one's face, as to spring forward such a club ended pillar and absurd door line as is shown in Fig H, to be possessed of any characteristic beauty.

Digitized by Google

It is in these distortions and abnormities, where the intense ignorance of linear design is exhibited in all its force, and it is because of these idiosyncrasies in motor body design that they are dealt with in these articles on carriage drawing. For a man to attain a wide knowledge of carriage drawing and design, he will have to impose a task upon himself extending over years of study and wide culture, to give elasticity to his lines in their bold and delicate tracings, and as time is the avenger of all wrongs, it is also the perfection of all knowledge. It demands patience as the toll and path to excellence, for "patience is bitter, but the fruit is sweet," and nothing in this world worth having was ever attained by any other way than that of self-sacrifice.

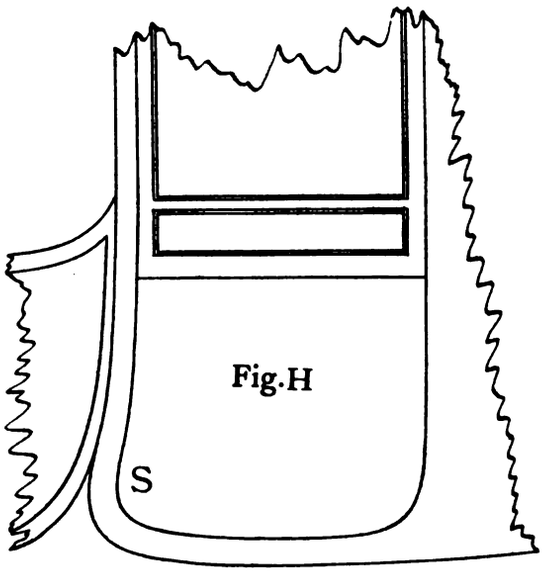


Fig.H

The power of free hand drawing admits of thought lines being portrayed on the movement, and is in art a lever of the first order, but geometry enables the draftsman to fashion the lines of construction with unerring exactitude, while mathematics enables him to gauge the strength of materials, and also the structural lines of strength. So that to be a carriage draftsman in its full sense, means that those following this branch distinctly should be richly dowered in art and science educationally, and to have the inate faculty of putting their talent to practical use in the designing of carriages, whether of mechanical propulsion or for animal traction.

BUILDING ANOTHER PLANT.

At Flint, Mich., on December 16, steam was turned on for the first time in the new No. 4 plant of the Weston-Mott Company, where the concern will manufacture auto rims and hubs exclusively. As fast as possible the new machinery is being installed. Work on still another new plant is going ahead rapidly.

TRANSFERRED WORKS TO PEORIA.

As a result of the fire in the Mitchell Wagon Works, at Racine, Wis., the Bartholomew Company, whose bodies were being built by the Mitchell people, has transferred its work to the Avery plant in Peoria, Ill., until such time as a new factory can be erected in Racine. The Bartholomew concern makes the Glide automobile.

ISSUES $200,000 BONDS.

The Sheldon Axle Works, of Wilkes-Barre, Pa., has decided to make a bond issue of $200,000, the proceeds to be used to erect new buildings and install machinery. The proposal to take this step at the directors' meeting was unanimously indorsed by all present.

DIVERSIFIED WOOD BORING.

One branch of machine wood-boring which furnishes very few themes for discussioon, and yet is varied enough and calls for sufficient ingenuity in the way of special wrinkles to give opportunity in plenty for discussion, is that of wood boring by machinery.

It is surprising, when one investigates the subject, how many different kinds and varieties of boring machines there are, carrying all the way from one simple bit up to a multiple of spindles and bits and machines designed to do automatically specific kinds of work in large quantities. Sometimes, in looking at a new offering in the way of multiple or automatic boring machines, says James Lewis in the Wood Worker, I recall my first introduction to what might be termed machine boring.

My first boring machine was a jack with two cranks and an upright slide carrying a bit chuck and gears to drive it, and a base on which the operator sat while turning the cranks to bore a hole. This machine lightened materially the burden of boring, especially in the early days of millwrighting, when there was lots of heavy mortising to do. That is, it lightened it by increasing the quantity of work which could be done in a given time. These boring machines were not light things to operate by any means, but they did chew a hole in wood rapidly as compared to the old augers.

From this primitive type of hand-power boring machine there was a passing view of a variety of post boring machines, and some automatic hub boring and mortising machines. And then came a year spent in an agricultural wood-working institution, where there were four or five different boring machines, besides two mortising machines, each having boring attachments. These boring machines furnished an interesting and varied study.

There were two horizontal machines of two spindles each, having a sliding carriage, which was fed up to the machine by hand, and provided with stops to regulate the depth of the hole. Also, the spindles could be adjusted to and from each other and the carriage, for height, so as to place a hole wherever desired in any given piece of material. They could be used two at a time for boring in pairs, or only one spindle used. These were used on what we termed light work, and bored holes ranging from gimlet holes up to about one inch diameter.

In the neighborhood of these, only setting apart to give plenty of working room around it, was a heavy type of boring machine having two spindles, one horizontal and one upright, coming down from overhead, and a table, or rather a bench with rollers in it, arranged on the machine pretty much like a swing cross-cut saw table. This table was about 10 feet or 12 feet long, and was supplemented at each end with rollers mounted on "horses," when it became necessary to handle long timber, which we frequently had to do—timber as long as 16 feet and as large as 4 inches by 14 inches, sometimes. This machine was used mainly for heavy boring, but some small holes were bored with it, more because small holes were required in heavy timber than because of the preference of the machine to do small boring.

The holes ranged in size from 3/8 inch up to 2 inches. Occasionally we bored a 3-inch hole, but very seldom. The work calling for the use of this machine most was the making of hay-baler frames. And some time, if you have a chance to look at a wooden framed hay-baler and will take note of all the different sized bolts and other things requiring holes, and consider that every one of these was bored on this machine, you will understand something of how much variety there was and how many changes were required in boring one stick of timber, Sometimes there would be three or four, or possibly half a dozen, holes of the same size in one stick, then possibly one or two of another size. When these were marked and could be bored by the marks with the overhead spindle, they could all be bored without changing. When they were bored by gage, it was a different thing. The changes had to do with the set of the gage, rather than with the size of the hole. Sometimes, too, for the

Digitized by Google

sake of countersinking, it was necessary to bore in probably 1 inch with, say, 1⅛-inch bit, then take this bit out and bore the hole through with ⅜ or ½-inch bit, whatever the bolt size happened to be.

Then over against the wall, at one side, we had a big upright boring machine with a table under the spindle, reminding one somewhat of a shaper table. This machine was reserved more for special work on a large scale than anything else, and here we had to take stock of various kinds and sizes, ranging from ⅜ inch corn-sheller side panel of 12x24 inches, to baler sills 3x10 inches or larger and 14 to 16 feet long.

There were a few regulation augers for this machine, but the majority of the bits were of a peculiar design, and were home-made. The home-made ones seldom had screw points. Some had guiding points, made usually three-cornered and resembling somewhat the end of a three-cornered file sharpened off. Some had simply a block turned off in steps and mortised out to receive a bit, something like a plane bit, one part of it being turned to a short nose or guide, to enter a hole already bored, the next part to represent the size of the hole, and it was intended to rim out around it; and above this was another shoulder to make a stop gage.

There were several peculiar designs in this class of home-made boring tool, and it may readily be guessed that they gave an almost endless lot of trouble through choking up and striking knots and the bits knocking loose, from setting too rank or from one source or another, and I very often wondered why some firm didn't make a sort of feature of supplying these special boring tools made to order for any size or shape of hole of any depth that might be wanted, and make them on correct mechanical principles, so that they are dependable. We lost time enough monkeying with these old home-made appliances to have bought twice over during the one year new, modern boring tools, and probably would have bought them readily had we known where they could be secured. As it was, we got along very nicely, because there was seldom any great quantity of work of this special kind to be done. It was just a matter of boring a few holes here and there. The biggest single boring item would come in boring the holes in corn-sheller side panels, for the fans or something of that kind, holes from 3-inch to 4-inch diameter, of which we would bore maybe 200 or more at one setting.

It is a peculiar fact, however, that with all the difficulties that would arise from time to time, owing to lots of the bits being home-made rigs, that the most troublesome thing of all about these boring machines was in taking out and putting in bits. All the machines had what is generally considered modern chucks, and there was always a wrench at hand so that the bit could be removed in almost a wink and another inserted in its place, but the trouble was that when you would insert a fresh bit or auger and start the machine off, it would wabble around at the point, and it took more time setting and resetting in trying to get it to run anything like near true, than it would take to bore several holes. At times, when we had trouble with this, I often longed for a universal boring machine of an entirely different type than what we generally understand being meant by the term. I have longed for a long roller-topped table, extending all along the side of the building, with boring machines scattered all along it, each carrying different sizes of bits, so that one could change from machine to machine instead of from bit to bit. This probably would not be any more satisfactory in the end than the changing of bits, but it would have been a swapping off of one kind of trouble for another, and occasionally that is some relief.

Since this year of experience of varied boring I have noted new things in boring machines, and that particular thought has been given to self-centering chucks and things of that kind, but even now, when I see a man putting a new bit into a boring machine, quite frequently the bit wabbles around at the point, and I keep wondering when we are going to have boring machines and boring-machine bits that can be changed, taken out and put in without a man having to spend a lot of time truing each bit up.

This, it seems to me, is one of the most important parts about a boring machine—to get one as nearly perfect in this regard as practical. The saving of time here, especially where it is necessary to change bits frequently, is worth expending considerable extra money primarily for a machine, or the bits to go into it.

SOLDERING OF METAL.

Editor The Hub: Can and will you have your expert give some information in the matter of soldering brass pieces when broken, also of soldering galvanized iron, and brass to iron. Please give any other information on the subject that you may think of value to novices. I have tried so many methods which have appeared in journals claiming to "know it all" in the auto trade, which have been absolutely valueless, that I concluded to go to the top and try and get real information from you.

Mobile, Ala. E. L.

The matter is rather simple. It will be necessary to prepare for the work before doing it. The flux is muriatic acid. It is prepared by placing it in either a glass or vitrified earthen vessel, into which drop small pieces of sheet zinc until the acid ceases to give off a vapor. Next, prepare your acid brush, which is made as follows: Form a piece of tin wide enough and about six inches long, round or cylindrical, into which place hair from a horse's tail or mane, then close the tin down on to the hair, forming a brush one-half-inch wide, one-eighth-inch thick and three-fourths-inch long, flattening down the remainder to form a hand piece. Clean the material of dirt of every kind. With a small, fine file clean up or brighten the metal.

Now, you may take a piece of iron wide enough to lay the piece to be soldered, on which you may heat up to about 200 °F. If necessary to secure the pieces together to hold them in position, do it with a piece of fine wire. Then lay the same on the warm iron, apply the prepared acid with the brush, then apply the solder with your copper soldering iron. When all done, clean off with a file. The object of the warm iron is to prevent the quick chilling of the solder, and thus destroying the possibility of cohesion.

The rule applies in the soldering of all metals, except aluminum, for which a specific flux may be obtained of all reputable dealers. In the soldering of tin, powdered rosin is the best flux. The acid flux destroys too much of the material. Avoid inhaling the vapor arising from the acid, as it has a bad effect on the mucous membranes of the mouth and nose, as well as the eyes and lungs. We fully agree with E. L. that the formulas sent out by many journals presided over by eminent people who are absolutely innocent of mechanics or applied chemistry, cannot possibly have any value. The best general solder to use is that known as "Half-and-Half."

AUTO TRUCK WHEELS.

There is a sustained effort by inventors to invent, compose, arrange or design wheels for heavy traffic purposes that shall do away with the use of air tubes, yet retain an effect that answers every purpose of the inflated rim tire.

A late example is of French origin. The wheel is of the accepted "artillery" model. On its outer rim rests the tire of hard rubber. Immediately beneath it is a backing of pieces of softer rubber pierced with holes, for a purpose to be explained.

This soft rubber felloe rests against the wood rim of the wheel that engages the spokes, but between the rim and the soft rubber felloe is an air bag that is to be inflated, which becomes a cushion between rubber and wood.

All the parts spoken of are finally inclosed between steel plates, fastened by bolts that engage both side sof wheel, bp passing through the holes in the soft rubber, as referred to. The wheel looks heavy, and presents a certain clumsiness, but the results it gives are spoken of favorably.

Digitized by Google

Carriage, Wagon and Automobile Painting

KEEPING DOWN THE AVERAGE.

This pharse generally refers to expense. We use it in its application to the man. A painter who runs his own shop and does his work without a fair idea of cost, may eke out a living, but, no matter how skillful he may be at his trade, his method is a distinct injustice to himself and to every other painter who is endeavoring to lift his business above the plane of the wages of a skilled mechanic only.

At this season the slack trade gives the man an opportunity to think over matters of this kind, and to find out how he can better conditions for the approaching season, and in doing his own business more profitably, enable some other man in his position to also do better for himself.

Where it has been a matter of depending for trade on the repainting of carriages, solely, it has now become possible to do something in the winter dull season in the line of automobile painting, owing to the very general all the year use of such vehicles. The prices for such work are not on the old plane, as owners have been educated to paying good prices for everything they may need in reference to the motor car, and the owner who was accustomed to dicker over price when it was a question of repainting a horse-drawn vehicle, does not hesitate to pay what is asked for any work to be done on the car, and what is also very satisfactory to the tradesman, pay promptly.

In such cases demand your price, let it be a price fair to you as a good mechanic, and thus help to raise the average of the trade of the vehicle painter. To do this, the old methods will have to be carefully gone over to see where the former mistakes may have been made. They will not infrequently be found in the lax way of accounting, the guessing rule that is responsible for so many of the prices made, when close estimates should have been employed.

This plan almost always leaves the painter in the dull season short of money with the prospect of getting over the dull time with a debt on his hands to work off when business starts up in the spring.

Try and keep a record of costs, not some elaborate scheme that is so full of detail that you get tired of keeping it up, but something that is simple, and that gets there even if only in an average way.

Your labor, or the labor of the man you hire, is a known quantity. The leak is usually in the time that slips away on the doing of the job without its full significance being considered. It is of the greatest importance to know just how long it took to do the work. Not how long you think it was in the doing, but the real amount of hours and parts of a day used up. The value of the material used ought to be a simple calculation. This plan enables you to find out how badly you may have stung yourself on some particular job, and how to avoid the repetition in some future estimate of the same kind of work. The moment you begin to guess, that minute you are taking a chance, and the business becomes a speculation with the element of chance the chief factor.

It is a matter of a few figures to work out the problem of the fixed charges, such as rent, fuel, insurance and every other item you can possibly add to this account. You can't afford to overlook any item, and if you get in a few too many, you are not likely to do yourself any injustice in the working out of the average account of cost. Wear and tear of tools, that must be renewed, ought to be thought of.

When this fixed charge account has been figured out to your satisfaction, it does not have to be done again, as it can be made a percentage proposition to add to the time consumed in the doing of any special piece of work, leaving only the time, the materials used, and the quality of the work required to be considered, which makes a quick estimate not so very difficult.

If all would do this the average price would quickly adjust itself to a business basis, and the average of the business would soon be what it ought to be. It would also reduce unfair competition to so small a compass that it need not be the strong lever it has always been to depress the just price of a good piece of work.

Any painter that can rise to this idea of the subject will be a man that will appreciate light and cleanliness in the paint shop, and will feel the necessity of having the best tools he can buy to use with the best materials he can lay his hands on.

The first cost of the best is a little more than poor materials would come to, but the time saved by working with the best makes up for the extra cost several times. Neither is there so much chance of work going wrong when working with the best. The fact that the job is almost sure to look better is also important. It brings the trade back again. There is no possible economy in the use of anything second-class.

The foundation of painting is the thing that makes the rest of the work a success. All will say that it is just so, but there is many a poor job of priming done with the excuse that time presses. If there is plenty of time raw linseed oil is favored by many who are a success at the business, but there is always the chance that the oil will sink into the pores of the wood without closing the surface, as is the intention. When this is shown to be the fact, it is said that keg lead in addition is good. Ochre of good quality is known to be first rate, and lead and ochre is the standby of many of the most skillful craftsmen, but it should not be mixed and used to cover as if it was a paint. The object is to secure penetration, not to lie upon the surface. Some shops add to the primer a coloring pigment that partakes of the color of the final coat that it is intended to apply. The golden rule is to brush the priming well into the pores, but to not overdo it in the matter of a too free use of the material.

A good tablespoonful of coach japan is a help to the quick-drying properties of a primer. If more speed is looked for, use still more japan, but the more driers, the less the value of the priming.

A good priming putty is made of equal parts of keg lead, dry lead and whiting. Add varnish japan and oil, equal parts until the mass comes to the consistency of glazie's putty. Color to taste. This is better than hard drying putty, as it will not show the spots through the next coat. If properly pressed into the holes, its staying qualities will commend themselves to the painter.

ADDITION TO PLANT.

Valentine & Co. has increased its already large Brooklyn plant by adding three new buildings, one a varnish and one a paint laboratory, which are additions to the laboratories already existent. The third building is an oil storage warehouse. These buildings had become very necessary additions for the better handling of the steadily increasing volume of business, which, by the way, we are told, surpassed all records in 1909.

Digitized by Google

MEETINGS OF DEALERS' ASSOCIATIONS.

Annual Session of the Wisconsin Organization and First Meeting of the Mid-West Association.

The Wisconsin Retail Implement and Vehicle Dealers' Association held its fourth annual meeting in La Crosse, Wis., on Tuesday, Wednesday and Thursday, December 14, 15 and 16, 1909. There was a splendid attendance, considering the cold weather, heavy snows and late trains. Excellent hotel accommodations and a splendid place for meeting and exhibit purposes made up for the other shortcomings, and the dealers will long remember their visit to La Crosse.

The members showed by their sessions and attendance that they are alive to the conditions that exist, and that they will do all in their power to make the task of selling implements and vehicles more of a pleasure in the future than it has been in the past. It was freely predicted that the Wisconsin association would in a short time be one of the leaders in association work. This was further accentuated by the fact that a number of members promised to "go down into their pockets" to gather in new members.

An exhibit of implements and vehicles was given in Germania hall. More than fifty firms were represented. Wisconsin and local firms did not monopolize the exhibition space, as would be natural to presume. On the contrary, some of the Eastern manufacturers showed up their goods in splendid shape, and the class and quality of the goods opened the eyes of many a dealer present.

President Sebenthall said in part:

"The great question before this association is that the implement business is not profitable. The fact is that at least 25 per cent. of the members assembled here will be out of business after twelve months.

"The trouble is that we do not receive enough for our goods. Prices are too low compared with the prices that we have to pay for the goods. We have in this country the manufacturers' association representing millions of dollars, who come together. Still they do not make the prices; they suggest things and suggest reform ideas among themselves. We did not understand the figuring of cost in securing business; dealers have in the past been unable to figure exactly what it cost them to do business, and therefore many have done so at a loss, and find it out when it is too late. That has brought about many changes. We hope to bring about a better condition of affairs, and it is by organizing that we can do so, not by trying to regulate prices or stifling competition, but simply getting together and educating one another; by getting in contact with each other, exchanging ideas, and so these annual gatherings are held."

O. E. Scherer, who is the mayor of Palmyra, as well as a dealer, had this to say:

"Farmers, as a rule, have made money, and when you sell an automobile to a party in a certain community you may rest assured that some of his friends envy him the pleasure he finds in having an automobile, and if their bank account will at all permit them to make the purchase of an automobile, it is a sure sale for the man that goes after the deal.

"I have even sold to a number of people who did not have the ready money, but their securities appeared O. K. to me, and I took their note, and, in some cases, chattels in settlement.

"The automobile is by far the best side line I have ever taken on, and to prove to you my faith in it as the coming business in our line, I may say that I have now under way a building 54x92. It requires considerable room for the automobile business, as you should have an office and salesroom, repair room, wash room and transient room to carry on the business. There is opposition at the present time in the automobile business about the same that exists in most any other line that pertains to the implement business. However, if you are fortunate enough to secure the agency for a good standard car with which you need not fear competition by going into a contest and are able to show your customer that you have the best machine for the money on the market, you will experience no trouble in getting business.

"I chiefly attribute my success, if you may term it success, to place the number of cars that I have in my territory the last season to the actual demonstrations I have made to the intending buyer, thereby showing him that an automobile is not alone a luxury or pleasure vehicle, but that it can be successfully put in use as a business proposition as well, which cannot help but appeal to the live and energetic man in these times."

Meeting for the first time as the Mid-West Implement and Vehicle Dealers' Association, at Omaha, Neb., on Tuesday, Wednesday and Thursday, December 14, 15 and 16, the members of the old Nebraska and Western Iowa Association and the old South Platte Association, which were merged into the new one last year, indulged in a pleasant hour of handshaking and getting acquainted with each other at the opening of the annual convention at Creighton hall. There was hope in every heart, and enthusiasm in every voice, that the new association has been started on a firm foundation, and that it will make splendid history during the next ten years.

Joseph G. Baker in his address, said:

"The commission contract has been, is, and always will be a detriment to the honest and thorough business man, be he either dealer or manufacturer. The standard of the retail implement and vehicle business has risen just in proportion as the commission contract system has been reduced, and the sooner it is discontinued entirely the better it will be for all of us engaged in the implement and vehicle business. Forty years ago over 80 per cent. of the implement and vehicle business was done on commission contracts and less than 20 per cent. on straight sale contracts, while to-day over 80 per cent. is transacted on a straight sale basis and less than 20 per cent. on commission contracts. The implement, farm machinery and vehicle business is great enough to stand alone. It has assumed sufficient importance to be specialized, and to occupy its own domicile in every city or town where other lines of merchandise are handled successfully. But I am going to repeat what I have often stated before, and that is, to successfully and continuously carry on the implement, vehicle and farm machinery business, requires more capital, brains, hard work, patience and a stiffer backbone than to carry on any other kind of merchandising."

BEST YEAR IN COMPANY'S HISTORY.

The D. M. Sechler Carriage Company, Moline, Ill., has re-elected its present directors and officers, as follows: Directors, T. M. Sechler, J. W. Moon, A. T. McElvain, O. M. Stowe, W. J. Davis, H. O. Edmunds and J. S. Gilmore; president, T. M. Sechler; vice president, J. W. Moon; secretary, A. T. McElvain; treasurer, O. M. Stowe.

Reports submitted show that the last year was the best in the company's history, with trade conditions indicating that the high record just set will be surpassed in the coming season. The plant is being operated with a capacity force on a basis of ten hours a day.

CONSOLIDATION.

The Newark Coach Lamp Company, of Newark, N. J., has sold its good will, patents, dies and lamp-making machinery to C. Cowles & Co., of New Haven, Conn.

This is an important consolidation in the sense that the New Haven corporation becomes a very commanding factor in the lamp business, by this absorption of the business of the Newark concern.

Such styles as have proven popular lines with the Newark company will be continued.

R. E. Hawkins has engaged in the carriage repair business in La Grange, Ga.

Digitized by Google

SPECIAL TRADE NEWS FROM MICHIGAN

Newsy Notes by our Correspondent Concerning Well Known Carriage and Automobile Manufacturers in the Wolverine State.

Ready to Start Up.—At the Lion Motor Works, in Adrian, the end of preparation and the commencement of the actual manufacture of machines is in sight.

New Plant Considered.—The Erd Motor Company, of Detroit, plans to erect a new motor plant on Niagara Street, between Mackinaw and Van Buren streets, to cost $12,000. There has been a steady increase in the number of employees.

Sold Entire Output.—William E. Metzger, head of the Metzger Motor Car Company, whose associate is the well known auto builder, B. F. Everitt, returned to Detroit from New York, after completing the final details for the disposal of the entire output of the "Everitt 30."

In Their New Quarters.—The Sparks-Withington Company, makers of automobile accessories, in Jackson, is now settled in its new factory on North Street, adjoining the Michigan Central and Grand Trunk railroads. Hubs and brake drums are being manufactured rapidly.

They Want It.—Members of the Wyandotte Improvement and Business Men's Association have been making overtures to the General Motors Company, looking to the location there of the new plant of the General Motors Company, for which a site already has been purchased in Detroit.

Another Richmond in the Field.—Lansing's newest industry is the Auto Wheel Company, the organization of which was perfected early in December. The capital is $150,000, and E. S. Porter is president and manager. It is a reorganization of the Lansing Spoke Company, whose plant it bought.

New Departure an Aid to the Carriage Builder.—Plans are said to be on foot in Marshalltown, Iowa, to organize a stock company to build a factory for the assembling of automobile parts and put on the market a first-class motor car. George B. Craven, of Detroit, in December, visited Marshalltown business men with regard to the proposed venture.

Believe in Electrics.—Wilson Critzer, of the Anderson Carriage Company, Milwaukee Junction, says that his company has planned an output of 1,500 "Detroit Electrics" for the year 1910. There is no particular phase of the carriage industry that is being pushed by this firm, just now the main attention being centered on the auto trade, which has thus far proved successful beyond the company's expectations.

The Influence of the Auto-Seat.—Will the auto-seat cutter and sleigh soon become general? That is the question being asked among members of the trade in Michigan. The tendency in the trade seems to be toward the auto-seat for all vehicles as being the most comfortable as well as the most pleasing from the point of shapeliness. The first known Michigan concern to make cutters with auto-seats is that of Prouty & Glass. It is regarded as more of an experiment than anything else, yet it seems to have "caught on" well.

They Celebrate and Enjoy Themselves.—Officers and heads of departments of the Timken-Detroit Axle Company, to the number of seventy-five, recently participated in their first "jollification party," attending the Temple Theater in a body, and afterward enjoying a "Dutch" lunch at the Fellowcraft Club. W. H. H. Hutton, Jr., was master of ceremonies. Short speeches were made by H. W. Alden, R. R. Weaver, A. R. Demory, E. W. Lewis, Mr. Gilbert and E. B. Lozier. Throughout special emphasis was laid on the importance of "team work" as an essential of industrial success. Musical selections were given by the Timken quartet. The entertainment was in honor of the company's huge business increase this year.

New Body Company.—Articles of incorporation recently were filed by the Detroit Body Company, which has secured a location for a factory at Kercheval Avenue and the Michigan Central Belt Line. The company has the same officers as the Sibley Lumber Company, namely, Frederick M. Sibley, president; F. M. Sibley, Jr., vice president and treasurer; Harry H. Berger, secretary. Frank J. Moham has charge of the construction. An addition to the factory soon will be built.

Don't Like It At All.—Michigan shippers are united in the opposition that has developed in this section to the new demurrage code adopted by the National Association of Railroad Commissioners and ratified by the Interstate Commerce Commission. They take the ground that shipping conditions in this state are of such a nature as to make the demurrage matter one of local application and that they should have certain concessions that are, perhaps, not required in other states. The so-called "average plan" is the main objection to the demurrage code.

Mixing It Up.—A fierce fight is on between the Detroit majority of the E. M. F. Co. and the Studebaker Automobile Company's minority interest. Both the Detroit and the South Bend concerns want control of the big auto industry in which each has been allied. On order of Judge Severance, of the United States Circuit Court, at the instance of the minority's petition, a temporary injunction has been issued restraining the E. M. F. Co. from going on with the sales. The case was transferred from Detroit to the Kalamazoo courts. The situation, as briefly stated, is that the Studebakers, having a selling contract for all the E. M. F. output, are attempting to carry it out in good faith and should be protected in the continuance of the contract. The E. M. F.'s position is that the Studebakers are not marketing the product and that its purpose is to break the E. M. F. Co. and secure its control after failing, it is said, to get the majority in any other way. Agents have been coming to Detroit by the hundred to make selling contracts and place orders for the E. M. F. cars.

Re-entry of the Carriage.—The consensus of opinion among the majority of the horse goods and carriage dealers of Detroit is, that within a few years the trade will swing back to a condition corresponding to what was regarded as nearly normal four or five years ago. Such dealers as have added the building of auto bodies, in that event, will probably be on a solid foundation, for it is believed that there will be a steady demand for that product for many years. Strangely enough, woman's vanity may prove the factor which will restore the trade. "Fashionable women love display," said Mr. Erdman, of the firm of Sievers & Erdman, carriage manufacturers, "and they can show their fine clothes and appear to more advantage in a handsome carriage than they can in any automobile that ever was made." Other indications that the good times are coming back are the increased demand for coach horses, especially noticeable in Baltimore, Chicago and Cincinnati, and the sudden revival of the harness business. Throughout Michigan the sales of harness and accessories, blankets and other goods in kindred lines have been astonishingly large.

Digitized by Google

GATHERING OF SELLING STAFF OF MOLLER & SCHUMANN COMPANY.

A most enjoyable and profitable convention was held at the factory of Moller & Schumann Co., in Brooklyn, the week of December 13th to 18th, at which all of the firm's representatives were present. The week was given over to the mixing of "business and pleasures"; the firm supplying most pleasant recreations in the way of theater parties and banquets for the representatives, and practical demonstrations for the benefit of their business.

There is small wonder at the success of this popular and old established firm, when you consider the thoroughness of the demonstrations and the results obtained.

Particular attention was given to the solid colored rubbings and finishing varnishes for carriages and automobiles, in which each representative was schooled. The solid colored rubbings demonstration, while a new feature with most of the men, was a most interesting one. The men were most enthusiastic over the demonstrations, and if every manufacturer of automobiles, carriages, etc., don't hear about them, it will be because the salesman can't get to them.

On the evening of December 14 all attended the performance of "The Traveling Salesman" at the Montauk Theater, and Thursday evening a banquet was given at the Hotel Bossert, Brooklyn's new million-dollar hotel, which was finished with "M. & S. Co.'s" white enamels and "Hilo" cabinet finish, at which the firm was voted "the best on earth."

Those present were: J. H. Schumann, Jr., A. G. Schumann, F. M. Schumann, C. J. Schumann, John H. Mills, W. R. Hyde, Henry Kalkbrenner, William Gloeckner, Charles B. Dreyer, Sim Bodenheim, Gabe Bodenheim, Herbert G. Bailey, F. C. Schaefer, Henry Holzman, Jabez Gorham, George W. Clarke, William J. Woody, Ernest Loebl, James McClurg, William B. Bohn, A. H. Hoppen, Philip Carr, Charles Neues, Herman Uehlinger, Christ Wesp, Oscar Smith, C. D. Anderson, Joe Hessler, Joe Wilson, C. Dachert, E. Habersank, J. A. Murray and Dr. C. Lipschitz.

HEAT TREATMENT OF STEEL.

The heat treatment of various grades of steel has been found to be of the first importance by motor car makers. The ideas of Mr. Henry Souther, an expert, are here set forth:

"Intelligent heat treatment is quite as essential as the quality of steel; a commonplace steel may be given very good physical qualities by proper treatment, and the best of steel can be ruined by lack of it. There must be thoroughness in the various operations of annealing, hardening and tempering. Treatment carried on with sufficient care makes uniformity of product possible. How necessary this is in important drop forgings is obvious.

"The difference between ordinary material and the best of material is a great one. For example, the elastic limit of ordinary steel is 40,000 pounds to the square inch, with, say, a reduction of area of 50 per cent. Properly heat-treated, nickel steel will have an elastic limit of two or two and one-half times this figure, and yet have a reduction of area of 50 per cent. or more.

"Brittleness does not follow intelligent heat treatment; and the enduring quality is increased in greater ratio than the elastic limit. Consequently crystallization, fatigue or whatever the cause of breakage we are to prevent, is called, is less likely in a properly heat-treated and tempered material, than in an annealed and soft specimen. This having been discovered in the laboratory and established in actual practice, is now accepted by the metallurgical world, reversing previous general belief.

"Another commonly accepted belief has been that the stronger a piece of steel is, the stiffer it is; for example, that if one steel is twice as strong as another, it will bend only half as much under a given weight. But actual tests have shown that a chrome nickel steel, having an elastic limit of 150,000 or more pounds per square inch, bends under a given load, the same amount as a carbon steel. This is true as long as the load is within the elastic limit of the weaker material.

"The elastic limit of a well-tempered piece of spring steel is above 150,000 pounds per square inch. If a spring be made of soft steel and not loaded beyond its elastic limit, it would return every time to its original shape, but the deflection would not be sufficient to make a good spring; it would be hardly noticeable. The automobile industry has forced the spring maker to depart from his old materials and methods.

"Assume that a good .20 carbon steel has been used with satisfaction for a year or two on a given design of crankshaft, neither bending nor breaking through long continueduse. Assume the bearing surfaces are as small in area as possible to run properly. A crankshaft of highly treated chrome nickel steel, having an elastic limit four or five times as high as the .20 carbon material, would be no stiffer; but would have increased life and last much longer.

"Really sound knowledge as to steel has been spreading fast among the intelligent manufacturers, who use much discrimination in separating the false from the good. They have established testing laboratories and examine for themselves what materials they buy."

Sears, Roebuck & Co., of Chicago, have leased from the Grand Central Market Company the entire building at the northeast corner of Loomis and Harrison streets, which was erected nearly two years ago, and will use it for the manufacture of automobiles. The building is said to be admirably adapted for the purpose, being one story high, with sawtooth skylights running the entire length of the building, the dimensions of which are 140 feet on Loomis Street and 476 feet on Harrison Street.

Group of Moller & Schumann Representatives.

Digitized by Google

The Manufacture of Iron and Steel

An address delivered before the Philadelphia Carriage and Wagon Builders' Association, December 17th, 1909,
By Hugh P. Tiemann, Metallurgist with Carnegie Steel Company, Pittsburg, Pa

Iron Ore.—Iron almost never occurs in nature in the metallic state, but in chemical combination with certain elements, principally oxygen, from which it must be separated before it becomes the useful article of commerce. The compound of iron and oxygen is known as iron oxide, of which a familiar example is "rust." It exists, as a variety of minerals, in huge deposits which are widely distributed over the globe. These natural deposits, or "ore," always contain, besides the iron compound, a certain amount of earthly matter (principally sand or clay), technically known as the "gangue," with which they are mechanically mixed. Of course, an ore must contain a sufficient percentage of iron to make its extraction a commercial success. In the case of very low-grade ores, it may be necessary to subject them to a preliminary treatment called "washing" to remove a portion of the gangue.

In the production of metallic iron two things are necessary: 1. To reduce the iron, i. e., separate it from the oxygen, with which it is chemically combined; 2. Remove the gangue with which it is mechanically mixed.

Reduction is effected by making use of some substance which has a greater attraction or "affinity" for the oxygen than the iron has, and some form of carbon—practically coke or charcoal—has been found more and suitable for this purpose than any other. A further requisite is a high temperature.

The gangue is removed by melting it, and it must usually be combined with some other material, called a "flux," to render it more fusible. In the earlier processes part of the iron oxide of the ore itself was used for the flux, but at present the iron is too valuable to be wasted in this way, and so lime, which also better answers the purpose, is added specially.

Original Methods of Smelting.—Probably the oldest method of operating was to dig a hole at the top of a hillside, forming a crude fireplace or hearth, which was filled with ore and charcoal. The top was then covered over, a hole provided in the top for a chimney, and another at the bottom so the air could enter and burn the fuel. The prevailing winds were depended upon for the draft.

The improvements made from time to time have consisted in supplying air under a slight pressure instead of depending upon the natural draft, building the furnace of bricks instead of earth and stones, etc. At first the temperature was comparatively low and the reducing conditions correspondingly weak, so the iron was never actually melted, and was soft; that is, contained very little carbon. There was always a certain amount of slag intermixed with it, the same as with puddled iron.

To obtain greater output, and at the same time reduce the proportion of fuel, the height of the furnace was gradually increased, and with it the temperature and the reducing action, the blast pressure also being increased, so that eventually the product was fused, and in consequence contained a considerable percentage of carbon, constituting cast iron or pig iron.

Blast Furnace.—The modern blast furnace is a vertical circular shaft built of fire bricks, which are usually sheathed with steel plates. The interior of the shaft is not perfectly perpendicular, but contracts gradually both ways from the widest point, which is slightly below the middle, called the "bosh." The inside diameter at this point is one of the measurements given to indicate the size of a furnace. Thus, a furnace 90x21 means that it is 90 feet high and 21 feet in diameter at the bosh. At the bottom, however, where the molten iron collects, the walls are perpendicular; this part of the furnace is called the "hearth" or "well."

The raw materials for the charge consist of: 1. Ore, which, as we have already seen, is composed of oxide of iron mixed with impurities or "gangue"; 2. Coke, to reduce the iron and also to supply the heat required; 3. Limestone, to "flux" the gangue, i. e., to make it sufficiently fusible, and also for its chemical effect on the process. The resultant product is called the "slag" or "cinder."

The air for burning the coke, called the "blast," is introduced into the furnace at a point just above the hearth through a series of pipes known as "tuyeres," and has a pressure of about 10 to 15 pounds per square inch. It is preheated in huge "stoves," as this effects a great economy in fuel.

The raw materials are charged continuously at the top, and the furnace is always kept filled to a certain point. Everything used is very carefully analyzed and weighed or measured, as it will not do to leave anything to rule of thumb.

As the charge descends, it is gradually heated and the iron reduced, until finally the whole melts and collects at the bottom in the hearth. The iron is tapped out at intervals through the "iron notch" at the bottom of the hearth. The slag, which is only about one-third as heavy as the iron, floats on top of it, and is tapped out at more frequent intervals through the "cinder notch," which is above and to one side of the iron notch.

At one time all the iron was run into sand beds, in which were shallow depressions or molds, and the name "pig iron" comes from the fancied resemblance which iron cast in this way bears to a litter of sucking pigs, and the runner to which the pigs are attached is called the "sow." The best modern practice is to cast in iron or "chill" molds, to avoid the sand which always adheres to the outside of the pig when cast by the former method. In large plants the metal is tapped into ladles and used immediately in some process for the manufacture of steel before it has time to solidify. These modern furnaces have a daily capacity of about 300 to 600 tons.

Practically all the phosphorus and manganese in the raw materials will appear in the pig iron, but the silicon and the sulphur are, to a certain extent, under control by regulating the percentage of lime in the slag. The iron also contains about 3 to 4 per cent. of carbon.

Pig iron or cast iron, as such, can only be made into finished objects by casting it in molds, as it contains so much carbon, silicon, etc., that it cannot be forged or rolled. To convert it into wrought iron or steel it is necessary to "refine" it; that is, remove these impurities as far as possible or to a certain extent.

The old method of producing wrought iron from the ore in one operation is now called the "direct process," in contra-distinction to the present or "indirect method," which consists in first making pig iron and then refining it, as it is not possible to regulate the process so only a limited amount of carbon, etc., will appear in the iron. The reason the direct method has passed out of use is because the resultant product is in a pasty state and its handling is very costly, while pig iron and steel, which are made in a fluid condition, can be handled largely by gravity.

Acid and Base.—We must now digress for a moment to consider a subject, which at first sight appears complicated, but is in reality very simple, and that is, the meaning of the terms "acid" and "base."

In chemistry it is considered that every substance is composed of one or more simple substance or "elements," and, depending on their properties, these elements are divided into metals and non-metals. In metallurgy, bases are usually the oxides of the metals, and acids, the oxides of the non-metals. This is the most practical definition, as the one ordinarily given, that an acid, for example, is a substance which has a sour taste and turns blue litmus paper red, is not broad enough to cover the

Digitized by Google

present case. In metallurgy, the principal acid is silica (pure sand), which has no effect on litmus paper, and no taste whatever. Iron oxide is a base, and another, and the most important, is oxide of calcium or lime.

Bases and acids have the property of combining together to form compounds which are not easily split up, while bases do not combine with bases, nor acids with acids to form such stable compounds.

Wrought Iron.—Before any of the present methods for making steel were known, the soft iron produced by the direct process was termed "wrought iron" (or, if higher in carbon, "wrought steel") from the fact that it was hammered or worked. The term now means soft iron containing a considerable of intermingled slag. The principal method for its production is known as "puddling."

Puddling Process.—This process was invented by Henry Cort in 1784, and has been slightly modified since then, but not to any extent within the last sixty or seventy years. In present practice, pig iron is melted down on the hearth of a reverberatory furnace lined with oxide or iron, which serves to protect the iron walls, and also forms the greater part of the slag. This oxide, and the oxygen in the gases passing over the hearth, oxidize the impurities in the iron, and since the slag is basic, a large part of the phosphorus (which is oxidized to phosphoric acid), usually some of the sulphur, and practically all of the carbon, silicon and manganese are removed from the iron. As these impurities are eliminated, the metal grows more and more infusible, and hence pasty, until finally it becomes completely solidified. It is worked constantly at this point to insure the proper oxidation of the carbon, and is then collected into large "balls" weighing about 100 to 200 pounds each, and taken to a machine where it is "squeezed" to remove the greater part of the slag with which the particles of iron are mixed. After this it is rolled into long, narrow "flats," in which condition it is known as "muck bars." Those are cut up into short lengths, a number of which are piled together and reheated, and the "pile," as it is called, is then re-rolled into finished or "merchant" material. With each additional heating and working, a further amount of slag is removed, but the elimination is never complete, and the slag remaining occurs in long threads or rods which serve simply to break up the continuity of the iron and form lines of weakness, so that wrought iron never has the strength of any grade of steel. This slag also gives the fracture of wrought iron its characteristic barked or fibrous appearance.

A puddling furnace usually takes a charge of from 400 to 600 pounds, and the process requires about one and one-half to two hours.

Wrought Iron from Scrap.—Instead of obtaining all the iron needed in a given plant by puddling, as just described, it is usually customary to buy up a certain amount of iron scrap which, in addition to that produced in the plant itself, is heated and re-rolled into finished material. Before the manufacture of steel by the Bessemer or the open hearth process, the iron rerolled from scrap was of least as good quality as that obtained from muck bars. Now that such great quantities of steel are made, however, it frequently happens that some of it (both low and high carbon) gets mixed in with the wrought iron scrap, and the result is a material containing pieces of steel and iron which are not welded together.

Bessemer Process.—This process was discovered by Sir Henry Bessemer about 1855 in England, and, it is claimed, by William Kelly at an earlier date in this country. It consists in placing molten pig iron in a suitable vessel or "converter," and then blowing cold air through it. The oxygen in the air attacks the impurities, and their oxidation (which is as much combustion as when coal or coke burns) supplies so much heat, and so rapidly, that at the end of the process the metal is several hundred degrees hotter than at the commencement, and the resultant steel is in a perfectly fluid condition.

The converter is egg or pear-shaped (the German word for it is "birne," meaning "pear") provided with a number of holes or "tuyeres" at the bottom, through which the air enters under a pressure of 20 to 25 pounds to the square inch. At first it was lined with pieces of silicon rock which, as we have already seen, is acid, hence no phosphorus could be removed, as any which was oxidized to phosphoric acid was reduced immediately and returned to the iron. To effect its elimination it is necessary to have a basic lining to permit of a basic slag (a basic slag would attack and wear away an acid lining), which was first successfully introduced by Percy and Gilchirst about 1879, and consists of crushed burnt dolomite (a mineral composed of the carbonates of lime and magnesia) mixed with a little pitch or tar to bind it together. A certain amount of lime is added to each charge to form the slag. In this case the oxidation of the phosphorus is depended upon for a certain amount of the heat needed. The original process in which no phosphorus is removed is called the "acid Bessemer process," and the later modification, in which phosphorus is removed, the "basic Bessemer process." This elimination or non-elimination of phosphorus constitutes the practical difference between any acid and basic process.

The progress of the operation is indicated by the appearance of the flame issuing from the mouth of the converter. At first only the silicon and the manganese are oxidized, and the flame is very weak. Later, when the carbon burns, it becomes so brilliant that special dark glasses must be worn to protect the eyes when observing it. Finally, when nearly all the carbon is gone, the flame becomes less brilliant and much shorter, or "drops," indicating that the action is complete. The metal is then poured into a receptacle called a "ladle," from which it is run into ingot molds through a hole in the bottom. As the steel is fluid, the slag, which is very much lighter, is enabled to rise to the top, and in this way a very perfect separation results, so that practically none appears in the finished steel; this constitutes the present distinction between steel and wrought iron.

In order to give the steel the desired composition, carbon, manganese, etc., are added while it is running into the ladle.

In the basic process there is a further period after the "drop of the flame," called the "after-blow," during which the phosphorus is oxidized and passes off into the slag.

Ordinary Bessemer converters have a capacity of from 10 to 15 tons per heat, and the time for a heat is about ten to fifteen minutes.

For steel to be of good quality, the phosphorus which it contains must not be above 0.1 per cent., and for some purposes it must be considerably lower. Consequently, in any acid process, it is necessary to have the original materials contain less than the amount specified in the finished steel. This fact causes pig iron to be classified as "Bessemer" and "non-Bessemer," depending on whether it does not or does contain over 0.1 per cent. of phosphorus. These names are also applied to the ore according to the respective grade of pig iron which can be made from it. In this country there is no large deposit of ore containing enough phosphorus (for the extra heat needed) to make pig iron suitable for the basic process, hence only the acid process is employed, and pig which contains more than 0.1 per cent. of phosphorus must be treated by the basic open hearth or the puddling process.

Open Hearth Process.—This process, invented by Sir C. W. Siemens, was first used commercially in 1865. It somewhat resembles the puddling process with the great difference, however, that the metal is always molten except at the beginning during the melting down of any solid materials in the charge.

The furnace, known as an open hearth or Siemens furnace, is of the reverberatory type, and the fuel is either gaseous or liquid (oil)—never solid. Its chief peculiarity lies in the means employed for securing the very high temperature necessary to keep the charge molten, particularly towards the end of the process when nearly all the impurities have been removed. To do this, the air alone, or both the air and the gas, must be pre-

Digitized by Google

heated. At each end of the furnace, below the floor level, are flues or chambers connecting the furnace with the stack or chimney. These flues, called "regenerators," are filled with "checker work"; that is, firebricks laid in such a way that small passages are left. The air, or the air and the gas separately, go through one set of regenerators before entering the furnace where they mingle and burn. The waste gases leave the furnace at the other end, and then pass through the other set of regenerators before reaching the stack. The direction of the gases is reversed at regular intervals, so that the regenerators, which are heated by the waste gases during one period, give out a part of their heat to the incoming gases during the following period, and, in consequence, the temperature for cumbustion is much higher than could be obtained in any other way.

The charge ordinarily consists of pig iron, either solid or molten, and various kinds of scrap. The same remarks about the acid and the basic Bessemer process also apply here: In the acid process, where an acid (sand) lining is employed, the charge must not contain more phosphorus than is permissible in the finished steel, while with a basic lining (crushed burnt dolomite), it may vary very widely, as it is nearly all removed by the basic (limey) slag which can then be employed.

The present size of furnace has a capacity of 50 to 60 tons or more per heat, and the time for a heat is about eight to ten hours.

The bath, consisting of the molten metal covered with a thin layer of slag, looks like boiling porridge from the bubbles of gas formed by the oxidation of the carbon. The progress of the purification is determined by the appearance of the fractures of "test ingots," made by casting samples in a small mold, then quenching and breaking them.

When the bath is sufficiently purified and at the proper temperature it is tapped into a ladle in which the additions of carbon, manganese, etc., are made in much the same way as in the Bessemer process.

Crucible Process.—The crucible process, invented by Huntsman in 1740, consists in the melting of various grades of steel or iron in crucibles, and very pure materials must be employed, as practically no purification takes place. The usual charge for a crucible in this country is 100 pounds, and three melts are made every twelve hours. As the work is all done by hand, the product is very costly, and hence is used only for special purposes, such as the manufacture of tool steel, watch springs, etc.

Electric Processes.—During the past few years electric processes have come into a certain amount of use, but their application is still limited, owing to the higher cost involved. Electricity is used simply as a means for supplying heat, and does not affect the actual purification of the metal per se, as in the case of the electrolytic refining of coppers. The furnaces usually employed bear a strong resemblance to those used in the open hearth process (except for the absence of regenerators and stack), and the general details are so similar that they need not be considered here.

The further treatment of the steel ingots produced by one of the preceding processes consists in rolling or forging them into pieces of the desired size and shape. As this is almost exclusively a mechanical proposition, it will not be considered in the present paper.

As the question of the relative ease of welding and threading pieces of wrought iron and steel is frequently raised, a word on the subject may be in order.

Welding.—One of the claims for wrought iron is that it is not only easier to weld, but that the strength of the weld is nearer that of the original piece than is the case with steel. This may be true to a certain extent, but is really evading the main issue. In the first place, wrought iron is never as strong as steel, consequently, even though the relative strength of the weld as compared with that of the original piece is greater, the actual strength is considerably less than with steel. In the second place, if the steel employed is of the proper grade, no difficulty in welding will be encountered if the process is properly conducted. Following are the principal points to be observed, which apply equally to iron and steel:

1. The pieces must be heated hot enough so that the metal is plastic, but not so hot that it is burnt. The proper welding temperature is a good white heat.

2. The surfaces must be clean; that is, free from all scale and dirt. For this purpose a "flux" is employed, usually borax for wrought iron and sand for steel.

3. Hammering should be continued until the temperature has fallen to a dull cherry red heat, and should not be confined simply to the actual weld, but should include the entire area which has been heated to a high temperature. When a piece of iron or steel is highly heated, the grains become very coarse, and the metal correspondingly brittle. The action of the hammering is not only to force the pieces into intimate contact and so effect the actual welding, but also to reduce the size of the grains, whereby the metal regains its original toughness. Failure to do this is the reason why material breaks, not at the weld, but at some point a short distance away.

4. The fuel employed for heating the pieces should be low in sulphur, as otherwise some of this element will enter the metal and cause a defective weld.

Threading.—The matter of threading steel is simply a question of employing a suitable grade of material and having the dies or taps properly prepared.

Wrought iron, as already stated, is full of a large number of rods of slag, constituting lines of weakness, so that in cutting the chip breaks off with more or less facility, no matter what style of tool is used. With steel, however, the metal is continuous, and hence the chip comes off in long tough pieces, which often tend to deflect the cutting tool, giving the thread a torn and ragged appearance, unless proper clearance is given. This is done by either setting the dies ("raking" them) at a slightly obtuse angle, or by grinding a lip or concave depression at the top of the die so that it actually cuts instead of dragging.

Another point is to bevel the first few teeth of the die so the thread is not cut to its full depth until the third or fourth tooth is reached.

SCREW DRIVERS.

Editor The Hub: Some few months since a friend sent me from your city a book purporting to have to do with automobiles—a monthly publication—on the pages of which was a chapter on screw drivers occupying about two and one-half of its pages. I read two paragraphs and concluded that I was reading the biggest chapter of scientific nonsense ever published. Without going into detail, I would most respectfully ask your opinion on such subjects. Do they educate the novice—as per myself? Does such stuff educate the workman? Are such subjects of any value to the auto car mechanic? I. W. G.

Syracuse, N. Y.

We must accept that our correspondent's question savors of good sound judgment. His questions answer themselves. He is to all intents and purposes absolutely honest and a little unsophisticated. Such matters do not apply to the efficiency of the mechanic or the work he is engaged on. The auto-car work of to-day is too intricate and requires too great a variety of screw drivers to perform the work to think of listening to a silly harrangue on their construction. Such chapters in books devoted to technics are absolutely silly and set forth one of two things: that the chief engineer of the book is absolutely innocent of any knowledge of the matter. The duty of journals devoted to technics is to instruct and to try and educate its readvoted to technics is to instruct and to try and educate its readers, not to lead them astray, at least such are our views of the matter and such has been the aim of this journal during its half century of publication.

A new concern, to be known as the French & Bean Co., has filed articles with the Vermont Secretary of State. Capital given as $30,000. One of the objects is to deal in harness and buggies. Lyndonville, Vt., will be the place of business.

Digitized by Google

OBITUARY

As the climax of an illness lasting many weeks, what was mortal of J. Henry Klune was laid to rest in the Evergreen Cemetery, in his native city, Brooklyn, N. Y., on December 21. He breathed his last four days earlier. The cause of his death was heart trouble. He was in his thirty-eighth year. Every hope seemed to have been justified that Mr. Klune would recover. It appears, however, that the heart was not strong enough to combat its own infirmities and marshall additional strength to fight other functional complications, so the patient yielded the fight. Mr. Klune leaves a widow, Emma B. Webb, and two daughters, Ethel and Gladys, in his immediate family.

J. Henry Klune.

The death of a baby boy last June, while the father was in attendance on the Saddlery Convention, was a mental shock that may have had its share in shaping the end we now deplore.

As the representative of The Hub and Harness, Mr. Klune was widely known in the trade, and like all positive men, had many strong friends. His kindliness of bearing and courtesy of manner were passports to the esteem of his large circle of acquaintances.

Mr. Klune joined The Hub staff seventeen years ago, and was a faithful friend and representative of its interests in capacities of trust through its several changes of proprietorship. He was a man of fine impulses and sterling character. The respect and esteem of his business associates was his by right,, and it was a pleasure to so acknowledge it. It may thus well be understood how his taking away has deeply affected those who felt honored by his friendship.

Mr. Klune was known as an all-around athlete in the Brooklyn Y. M. C. A. and Company K of the Twenty-third Regiment, from 1891 to 1896.

Joshua A. Hale.

Joshua A. Hale, an old time wagon builder, died at his home, Dayton, Ohio, in November. Mr. Hale was seventy-five. He was born in Urbana, Ohio, and was the last of his immediate family. For many years he worked for the Studebakers and worked on the government contracts for the building of prairie schooners, which were awarded to that firm many years ago. Mr. Hale was a veteran of the Civil War. He had lived in Dayton for twenty years.

Jacob Fisher.

Jacob Fisher, a partner in the firm of Rathbun, Fisher & Co., dealers in vehicles at Springfield, Ohio, died suddenly of heart failure December 2. He was fifty-eight years old. In early life he learned the trade of a carriage painter. He was thoroughly posted in the vehicle industry and was highly esteemed by his business associates and friends in Springfield. He is survived by his wife and several children. His partner, P. T. Rathbun, is secretary of the Tri-State Vehicle and Implement Dealers' Association.

William A. Sears.

William A. Sears, of Albion, N. Y., who was formerly a prominent business man of the village, conducting a wagon and carriage manufactory, died December 22, at the Conyea Sanitarium, where he had been about two months. He was sixty-nine years old.

W. S. Shuler.

Colonel W. S. Shuler, for many years connected with the steel spring industry and widely known in the carriage and automobile trade, died recently at his home, in Amsterdam, N. Y., of apoplexy. He was fifty-three years old.

John S. Meyers.

John S. Meyers, who established the Lansing (Mich.) Wagon Works in 1878, died at his home in Lansing, aged seventy-three years. He was a prominent manufacturer and business man until his retirement a few years ago.

Joel F. Yager.

Joel F. Yager, one of the prominent citizens of Owensboro, Ky., died of Bright's disease after a lingering illness. He was seventy-seven years of age, and had resided in Owensboro for thirty years. He was engaged in the manufacture of wagons and buggies. He is survived by a wife, five sons and two daughters.

Frank M. Nichols.

Frank M. Nichols, formerly engaged in the carriage building business, died in Cohasset, Mass., December 21. Mr. Nichols was born in New Haven, Conn. Up to fifteen years ago he was engaged in the manufacture of carriages. Mr. Nichols was a widower. He is survived by four sons and three daughters, Stephen, Bela, William, Frank, Mrs. Erza H. Towle, Mrs. Edward S. Ripley and Miss Anna Nichols.

Michael Blaettner.

Michael Blaettner, of Pomeroy, Ohio, died at his home, in his seventy-ninth year. He leaves three daughters and three sons. He had been engaged for years in the manufacture of wagons and buggies.

H. L. Hanson.

H. L. Hanson, president of Stoughton Wholesale Commercial Company at Stoughton, Wis., extensive dealers in vehicles, died December 27th at his home in above city.

LARGEST IN CANADA.

The completed new carriage factory of the Tudhope Carriage Company, Limited, Orillia, Canada, is something to be proud of. It was a speedy job. The brickwork was started September 24, and completed December 3. The roof was on three days later, and now all is in readiness to be shipping buggies by the tenth of January.

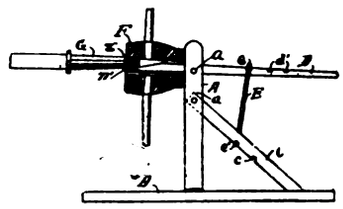
This is one of the largest and finest buildings for the purpose in the Dominion, with a 25,000-vehicle capacity annually. Everyone concerned in the enterprise is to be congratulated, and The Hub hopes to record in the near future a buggy in some stage of making on every eight feet of the 1,250,000 feet of flooring that was used in the construction.

Digitized by Google

RECETLY GRATED PATENTS O FINTEREST TO THE VEHICLE INDUSTRY.

Wagon Jack. Robert C. Tucker, Lamont, Mich. No. 939113. Patented November 23, 1909.

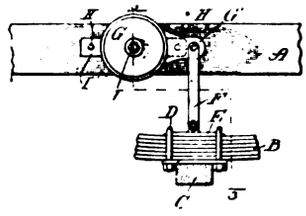
In a wagon jack, a supporting base, two parallel standards secured at one end to the base, a brace secured at one end to the base and thence extending diagonally upward and secured to the standards, and having notches in its lower edge, and the upper end firmly secured between the standards forming a ver-



tical slot and a pivot point between the standards, a rivet passed through the standards to form a pivot point between the standards above the end of the brace, a lever having a notch in its lower edge arranged to work upon the latter pivot points and having one end tapered to a broad, thin horizontal plate with a concaved vertical flange at the extreme end, and arranged to pass through a buggy wheel hub and form a concave bearing for the skein on the axle tree, and a link made to pass over the other end of the lever and extend down and engage the notches in the brace to sustain the weight of the buggy when removing a wheel.

Shock Absorber. Harry C. Turner, Los Angeles, Cal. No. 941594. Patented November 22, 1909.

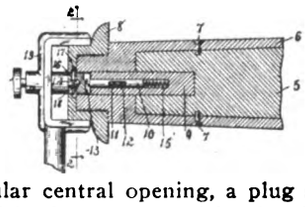
An anti-vibration device for vehicles, comprising a plurality of outer friction disks, a hub connecting disks, means for rigidly attaching the hub to a part of the vehicle movable relatively to



the other part, an inner friction disk, friction material between the opposed faces of the outer disks and the inner disk and pivotal non-flexible means for connecting inner disk to the other part of the vehicle, means whereby connecting means will be moved freely in one direction by the movement of its connected part of the vehicle and will cause the friction disks to operate when moved in the other direction.

Hub Attaching Device. Christopher C. Swanson, Laporte, Ind., assignor of one-half to William Conry, Laporte, Ind. No. 941470. Patented November 23, 1909.

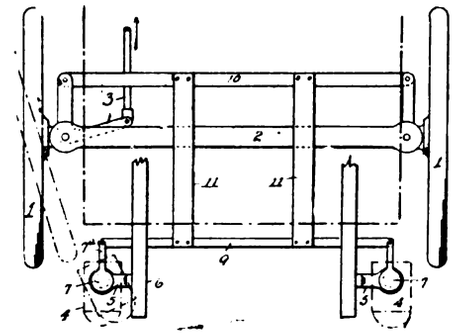
In combination with a spindle and a nut adapted to be screwed thereon, the spindle having an axial bore and the nut



having a rectangular central opening, a plug seated in the bore of the spindle and having a recessed head, a bolt yieldingly and non-rotatably mounted in the bore of the plug and having a rectangular head adapted to normally engage the recessed head of the plug and the opening in nut substantially in the manner and for the purpose set forth.

Operating Device for Vehicle Lamps. John P. Stein, Reading, Pa. No. 941739. Patented November 30, 1909.

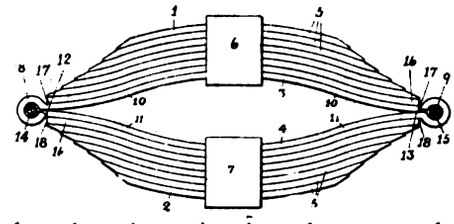
In an operating device for vehicle lamps, the combination of a steering apparatus comprising in its makeup a transverse rod, with two rotatably mounted lamps, brackets on which lamps are supported, oscillating holders in which lamps are mounted, a rearwardly extending arm formed on each of the holders, a second transverse rod pivotally connected at both of its ends to



the ends of the rearwardly extending holder arms, and a pair of stringers rigidly secured to the second transverse rod and to the transverse rod of the steering apparatus, so that both rods will move exactly the same distance when the steering apparatus is operated.

Elliptic Spring. Harry Jeffrey, Louisville, Ky. No. 941521. Patented November 30, 1909.

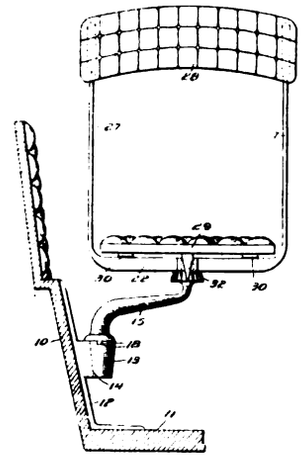
In an elliptic spring, having adjacent interconnecting leaves provided with an eye at each end, the eyes of opposite corresponding leaves mutually half-and-halved together laterally, the leaves joined together by a pin adapted to hold them together



laterally only, when the spring is under stress, the eyes being of larger diameter than the pin and the pin being of smaller diameter than the eyes, the leaves bearing against each other intermediate the eyes and the middle of the spring, in such a manner that the leaves in operation bear against each other with a rolling contact.

Vehicle Seat. Frank J. Elsner, Racine, Wis. No. 941983. Patented November 30, 1909.

A supplemental seat for automobiles comprising in combination, a supporting bracket having a vertical socket, a seat-sup-



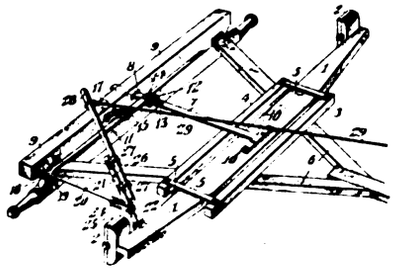
porting arm having a vertical pintle at one end slidably fitted and journaled in the socket and having means to interlock therewith to prevent the arm from turning, an upwardly extending stud at the other end of the arm, a collar at the base of stud having the periphery thereof notched, a hinged seat embodying a bottom cross bar having a central opening receiving the stud whereby the seat may be turned around stud as a center, and

Digitized by Google

a locking finger on the seat bottom adapted to engage any one of the notches of the collar when the seat is lowered.

Vehicle Brake. William T. Hinshaw, Valley Station, Ky. No. 941876. Patented November 30, 1909.

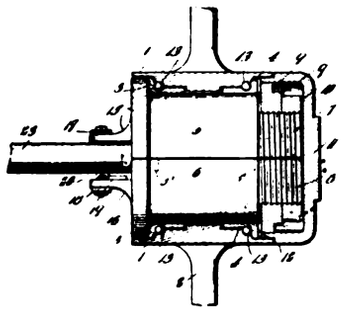
In a vehicle brake, the combination with a running gear provided in its rear bolster with a guide opening, of a guide frame



secured to and extending across the rear hounds, a brake beam slidable in the guide frame, a longitudinal bar passing through the guide opening of the rear bolster and having its front end rigidly secured to the brake beam, a horizontal transverse lever fulcrumed between its ends on the running gear and connected at its inner end with the longitudinal bar, a support secured to the brake beam and extending rearwardly from the same at one side of the vehicle, a lever fulcrumed at its lower end to the support, and means located at an intermediate point between the ends of the lever for connecting the latter with the outer arm of the transverse lever.

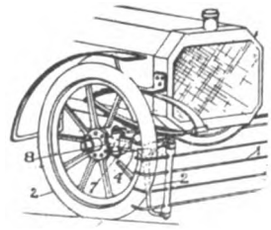
Automobile Axle. Mack D. Tindal, Columbia, S. C. No. 942151. Patented December 7, 1909.

In a wheel and axle construction, a main horizontal shaft provided with a circular head, a hub, comprising two separable semi-cylindrical sections and provided with registering recesses arranged to receive said head, a vertical shaft constituting a re-



taining bolt for said separable members arranged to pass through an opening in said head, vertical rollers between said vertical shaft and said head, a collar disposed on said shaft at the upper and lower ends of said rollers, bearing plates and space plates arranged to fit over said collars and to be held in a recess in said hub, together with a guide member arranged concentrically of said vertical shaft, and means on said horizontal shaft to co-operate with said guide member.

Fender. Augustus W. Shank, Detroit, Mich., assignor, by direct and mesne assignments, of one-half to George Rottman,

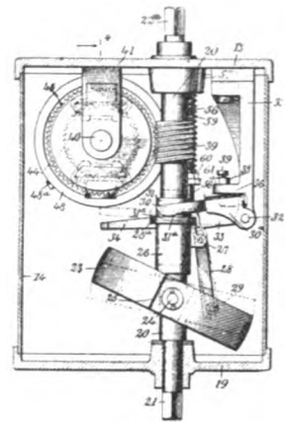


one-eighth to George W. Lynn and one-eighth to William W. Tackabury, Detroit, Mich. No. 942290. Patented December 7, 1909.

A fender for an automobile comprising in combination with the steering bearing wheels and members of the running gear which swing with the wheels, supporting brackets secured to the members, and a shield in front of the wheels pivotally supported on the brackets.

Gearing. Haydn M. Baker, Jr., New York, N. Y. No. 942609. Patented December 7, 1909.

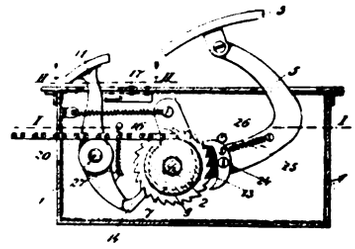
The combination of a revoluble shaft, a governor mounted thereupon, a sleeve encircling shaft and connected with governor, a rocking shaft, mechanism connecting sleeve with rocking shaft so as to cause the same to rock in consequence of changes of speed of governor, a pawl connected with rocking shaft and adapted to be shifted in position, and gearing connected with the shaft and driven thereby, the gearing including a revoluble member provided with a tooth, the tooth being so positioned as to engage the pawl whenever the latter occupies a



predetermined position controllable by the speed of the governor, and mechanism connected with revolubzle member and controllable thereby, the last-mentioned mechanism being driven by shaft whenever revoluble member is stopped by pawl.

Carriage Foot Brake. Carl Strohkorb, Berlin, Germany. No. 943104. Patented December 14, 1909.

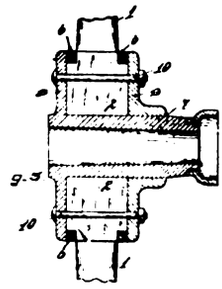
In a foot brake for carriages in combination a frame, a drum turnably arranged in the said frame, a brake chain connected to the said drum, a ratchet wheel firmly fixed to the said drum, a foot lever turnably arranged in the said frame, an operating pawl pivotally fixed to said foot lever and adapted to engage the



said operating pawl out of engagement with the said ratchet wheel, a locking pawl adapted to engage the said ratchet wheel, and a second foot lever adapted to disengage the said locking pawl from said ratchet wheel.

Wheel. David H. Allen, Miamisburg, Ohio. No. 944532. Patented December 28, 1909.

In a wheel, a series of spokes concentrically compressed to-

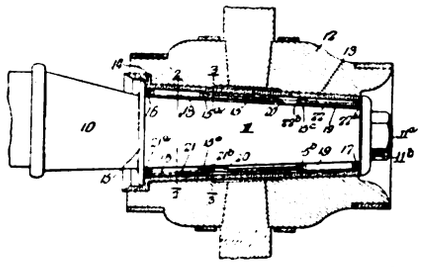


gether at their inner ends, a band secured upon a seat formed on the contacting ends of the spokes while held under compression and binding them securely together in wheel form.

Digitized by Google

Roller Bearing. Alfred L. Moore, Moline, Ill. No. 944684. Patented December 28, 1909.

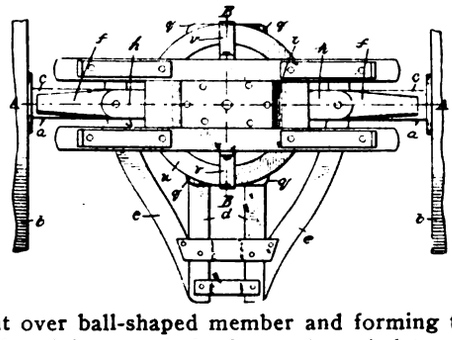
A roller bearing comprising a central shell having bearings formed in its opposite ends, and openings formed in the body thereof adjacent the ends, end rings spaced from the opposite ends of said shell provided with bearings, rollers journaled in



the bearings of the end rings and in the ends of said shell, and rods adapted to secure said end rings to said shell, said rods having one end countersunk in an end ring and the opposite end projecting into one of said openings in the shell and being there upset.

Coupling Device for Vehicles. William J. Kramer, Jr., Oil City, Pa. No. 944333. Patented December 28, 1909.

The combination with an axle, of a plate formed with a ball-shaped member and fastened to axle; a bolster; a socket plate



shaped to fit over ball-shaped member and forming therewith a ball-and-socket joint; a circle fastened to bolster; a pair of rocker plates having inclined faces; and means for supporting the rocker plates upon axle; the circle resting upon rocker plates and being free to rock from side to side relatively thereto.

WILL NOT REBUILD IN RACINE.

The destruction by fire, sometime since, of the plant of the Racine (Wis.) Manufacturing Company has proved a blessing in disguise for the LaPorte (Ind.) Carriage Company and the city of LaPorte, for it has enabled that company to secure a number of much needed employees from Racine, which means the growth of the factory and an increase in population of the city. The Racine plant will not be rebuilt in Racine, but the company will put up a plant in Indianapolis as the principal product of the company, which employed 1,200 men, was the making of automobile bodies for the Overland Company of Indianapolis.

The automobile body making business of the LaPorte Carriage Company is growing, and at the present rate it is estimated that within a year the pay roll will contain more than 300 names. Some of the old machinery has been replaced with new and much other new machinery has been installed. A new elevator has been put in, and the four-story warehouse on Madison Street has been converted into a body shop, being connected with the old body shop by means of a steel bridge.

J. B. Grades, formerly foreman of the woodworking department in the Racine plant, has accepted the position of foreman of the woodwork machine department of the LaPorte plant. He succeeds Harry Phillips, who has been placed in direct charge of the carriage work, which part of the business is not being neglected, although the automobile body business is growing very rapidly.

BANQUETED HIS EMPLOYEES.

Carriage Builder's Men Have Worked from Seventeen to Forty-six Years.

With men around the table who had been in his employ from seventeen to forty-six years, Aaron Kratz, the veteran carriage builder of Plumsteadville, Pa., gave his annual banquet with the old-fashioned guinea potpie as one of the courses. Among the diners and the number of years they have been in Mr. Kratz's employ were: Philip Jemkins, forty-six years, wheelwright; Wm. L. Brooks, forty-five years, blacksmith; John Townsend, forty-three years, painter; Frank H. Trumbore, thirty-fo years, wheelwright; Edward White, twenty-nine years, harness-maker; William Clouser, twenty-nine years, blacksmith; David Crouther, twenty-eight years, painter; William Ziegenfuss, twenty-three years, wheelwright; Jacob Gilbert, twenty years, blacksmith; Spencer Shively, seventeen years, painter.

Sixty years ago Mr. Kratz started his apprenticeship, and for the last fifty years he has owned the establishment at Plumsteadville. He is now seventy-eight years of age, and intends to retire. For the last fifty summers he has never missed spending a week at Atlantic City.

IMPORTANCE OF DESIGN.

Speaking of the importance of careful drafting and designing, and its effect on the promotion of sales, The English Automobile and Carriage Builder's Journal has opinions quite in line with those expressed in The Hub, from time to time. It is, therefore, a pleasure to quote, in part, what our contemporary has to say on the subject of the draftsman, even if the tone is ironical in places:

"One of the lessons which may be learned from the recent motor show is the fact that the design of the body is becoming of vital importance in its relationship to the commercial success of the carriage builder. The motorist of to-day is more alive than his predecessors to the niceties of outline, and the general balance of the design, so that bodies with broken curves, mixed turnunders and ill-proportioned parts, become landmarks in the showroom instead of birds of passage. The character and style of a body is what the draftsman makes it, whether he is specially devoted to this department or is a body maker or foreman. Therefore, on the training and perception of the draftsman much depends, and if his skill is indifferent and those in authority over him are unqualified to criticise, the firm will make little headway in the present-day struggle for orders. The draftsman should have a practical instinct, so that he may work out his suggestions before adopting them, and should study the general bases of design in order that he may not be too cramped in his ideas, and so become a mere technical machine. If he wishes to introduce improvements he may be sure that he is on the right road if his object is gained by simpler means and a reduction of the previous number of parts. He should be good at freehand and be quick in the execution of his work for nowadays carriage builders have started to supply outline sketches with estimates, while you wait. He also should be adaptable, so that he can design a cat ambulance, a laundry perambulator, or triple phaeton with a quadruple wind screen, with equal sang froid, and his knowledge should always be open to new lines of thought, inasmuch as seat fittings and head mechanism may any day be worked electrically, or by compressed air. This member of the staff, if he does his work efficiently, is one of the most valuable assets a progressive firm can possibly possess, but up to the present time we have been unable to discover any firm where his services are absolutely appreciated and encouraged, hence one need not be surprised if these young and ambitious gentlemen form themselves into a trade union in order that their employers may be forced to realize their indebtedness to the designers."

Digitized by Google

Trade News From Near and Far

NEW FIRMS AND INCORPORATIONS.

The Auto Wheel Company, Lansing, Mich., has taken the plant of the Lansing Spoke Company, and will rebuild and alter to accommodate the new business.

The North Star Auto Company, Stillwater, Minn.,, is a new concern made up of forty of the leading men of affairs in Stillwater. It will engage in the active manufacture of seven and five-passenger and runabout cars early in January. Shop room and machinery privileges have been secured from the Northwest Thresher Company.

A new concern to turn out wagon timber is about to be organized, with a capital of $20,000, at Harrison, Tenn.

Briggs Carriage Company has been organized and capitalized for $50,000, to build automobile bodies in Detroit.

The Pacific Motor Car Company has been incorporated in Spokane, Wash., for $50,000. Name expresses the object.

The Wisconsin Auto Top Company will begin business in January in Racine, Wis.

C. F. Knapp Company, at Chinook, Mont., has been incorporated for $40,000, to deal in vehicles.

W. A. White is engaging in the vehicle business in North Yakima, Wash.

Egbert, Egbert & Carr are about to engage in the vehicle and hardware business in Krupp, Wash.

T. J. Pier and others are organizing an automobile company in Brenham, Texas, with a capital stock of $5,000.

Cook & Taylor are engaging in the vehicle business in Broadway, Va.

The Wayne Auto Axle Company has been incorporated in Fort Wayne, Ind., with a capital stock of $100,000.

The Becker Wagon Works has been incorporated in Evansville, Ind., with a capital stock of $45,000.

The West Motor Car Company has been incorporated in Wilmington, Ohio, with a capital of $7,500.

Howard & Richardson have engaged in the vehicle and implement business in Ansley, Neb.

The Waco Automobile and Supply Company has been incorporated in Waco, Texas, with a capital stock of $7,000.

The Reynolds Motor Company has been incorporated in Detroit, Mich., with a capital stock of $40,000.

The Fulton Motor Exchange has been incorporated in Atlanta, Ga., with a capital stock of $10,000.

E. Coady & Co. are engaging in the vehicle and hardware business in McLoud, Okla.

The Magnolia Motor Company has been incorporated in Houston, Texas, with a capital stock of $10,000.

The White Auto Company has been incorporated in Guthrie, Okla., with a capital stock of $100,000.

The Pullman Auto and Supply Company has been incorporated in Birmingham, Ala., with a capital stock of $5,500.

The Brady Auto Company has been incorporated in Brady, Texas, with a capital stock of $20,000.

The Columbus Auto and Electrical Company has been incorporated in Columbus, Miss., with a capital stock of $10,000.

W. C. Gray, Jr., and others, propose to establish a carriage manufacturing concern in Beaumont, Texas, with a capital stock of $500,000.

The St. Louis Motor Company has been incorporated in St. Louis, Mo., with a capital stock of $10,000.

The Standard Automobile Company has been incorporated in Wheeling, W. Va., with a capital stock of $25,000.

The Southern Carriage Works has been incorporated in Emporia, Va., with a capital of $5,000.

Litz & Compton have engaged in the vehicle and hardware business in Supply, Okla.

H. P. Jacobson is about to open up a new stock of vehicles, etc., in Mason City, Iowa.

H. C. Varney is soon to open a stock of vehicles, etc., in Lineville, Iowa.

The Gillespie Auto Sales Company has engaged in business in Detroit, Mich., with an authorized capital of $25,000.

The Eby Auto Parts Company has been incorporated in Detroit, Mich., with a capital of $2,000.

The Renfro-Wheeler Manufacturing Company has been incorporated in Detroit, Mich., with a capital of $50,000, to deal in automobiles and parts.

The American Auto Trimming Company has begun business in Detroit, Mich., with a capital of $10,000.

The Nielson Motor Car Company has been organized in Detroit, Mich., with a capital stock of $50,000.

The Owen Motor Car Company has been incorporated in Detroit, Mich., with a capital stock of $500,000.

The Kohl Manufacturing Company has been incorporated in Indianapolis, Ind., with a capital of $10,000, to deal in automobiles.

The California Automobile Company has been incorporated in Los Angeles, Cal., with a capital stock of $24,000.

The Central Texas Auto Company has been incorporated in Taylor, Texas, with a capital stock of $10,000.

The Atlanta Motor Car Company has been incorporated in Atlanta, Ga., with a capital stock of $50,000.

The Victor Motor Truck Company, Buffalo, N. Y., will make motors, engines, etc. Capital will be $30,000. The incorporators are, H. D. Clark, O. L. Neal and B. E. Neal.

The Autoparts Manufacturing Company will soon be doing business in Jersey City, N. J.

The Bonner Automobile Company, with an initial capital of $2,500, has filed papers with the New York State authorities. Charles L. Bonner and J. G. Casteiger, both of Brooklyn, N. Y., are the names appearing on the application.

Capitalists are considering the establishment of a wagon plant at St. Croix Falls, Wis.

A company has been organized at Troy, N. Y., with a capital of $10,000, to manufacture a new shock absorber for use on automobiles.

The Kaufman Vehicle Company, of Miamisburg, Ohio, has been incorporated; capital $100,000.

The Johnson Motor Car Company has been organized, with a capital of $100,000, at Wilmington, Del.

The Webb Jay Motor Company, of Dunkirk, N. Y., has been incorporated with a capital of $500,000.

The Mayville Motor Company has been incorporated at Mayville, N. D. Capital stock $50,000.

The Union Brass Works, of Detroit, Mich., has been formed to do a general automobile business. The capital stock is $30,000.

The Johnstown Motor Car Company, of Johnstown, N. Y., has been formed. Capital $15,000.

The Ricketts Auto Company, of Indianapolis, Ind., has incorporated with a capital of $30,000. R. Ricketts, L. F. Ricketts and others, incorporators.

The Johnstown Motor Car Company, capital $15,000; incorporated at Johnstown, N. Y., by Charles A. Miller and James D. Pierson.

The Hoosier Auto Company, capital $80,000, has been incorporated at Garrett, Ind., by J. A. Moore, T. C. Little, J. B. Mager, L. Hunt and others.

Digitized by Google

BUSINESS CHANGES.

The Hiett Wagon Company, of Jonesboro, Ark., has been sold to the Jonesboro Transfer Company. Premises will be changed to stables, and offices for the latter company.

The Mound City Buggy Company, of St. Louis, is to add automobiles to its usual vehicle business.

The Webb Motor Fire Apparatus Company, now at Vincennes, Ind., is to be moved to St. Louis.

The Union Carriage Company, of St. Louis, is reported to be looking for a new location.

The United Vehicle Company, it is said, will remove its plant from Cambridge to Woodville, Mass.

The large plant at Summerdale, in the Twenty-third Ward, Philadelphia, formerly occupied by the Wolff Process Leather Company, has been sold to Phillip S. Smith, president of the recently organized Carlston Motor Vehicle Company. The plant consists of two one-story buildings, each 40 by 360 feet; a two-story office, 30 by 205 feet; a powerhouse, 50 by 75 feet, and several other buildings on a tract of about ten acres, with a frontage on the Frankford branch of the Reading Railway. The plant cost about $400,000 six years ago. The price paid for it by the Carlston Motor Vehicle Company is believed to have been about $150,000.

Patterson & Wingard, of Kearney, Neb., have dissolved. J. W. Patterson continues the vehicle business.

W. E. Riggs has purchased the interest of E. P. Hedge in the Hedge Auto Company, in Hastings, Neb.

B. M. LeGrande has sold out his stock of vehicles, etc., in South Haven, Kas., to M. J. Sample, of Toronto, Kas.

Bassett & McKissick have purchased the stock of vehicles, etc., of G. W. Bassett, in Washtucna, Wash.

Carr Beebe has purchased the stock of vehicles and implements of R. E. Browning, in Stafford, Kas.

W. F. Crowell has purchased the stock of vehicles, etc., of W. S. Betts, in Esbon, Kas.

W. C. Beisner and others have purchased the Purdy automobile business in Hebron, Neb.

Gilpin & Edwards have purchased the stock of vehicles, etc., of Crinklaw & McEntee, in Hurdsfield, N. D.

S. B. Knudsen has sold out his stock of vehicles, etc., to F. W. Brown, in Elba, Neb.

C. W. Street, Jr., has purchased the stock of vehicles, etc., of Bryan & Blakey, in Fayette, Mo.

J. L. Wickerson has disposed of his stock of vehicles, etc., in Tina, Mo., to J. J. Edmonds.

Linville Bros. have sold out their stock of vehicles, etc., in Tekea, Wash., to Schmidt & McGreevy.

George F. Brant has purchased the stock of vehicles, etc., of the Brant & Webber Co., in Washington, Kas.

Al. West has sold his interest in the Fremont Auto Company, of Fremont, Neb., to Oscar Gaines, of Arlington.

C. S. West has purchased the stock of vehicles, etc., of B. E. Johnson, in Hemingford, Neb.

John Rech has sold out his stock of vehicles, etc., in Brainard, Neb., to Fiala & Jakub.

W. M. Marvin has purchased the stock of vehicles and implements of Carter & Robston, in Albany, Ore.

The Patent Holding and Manufacturing Company has purchased the business of the Diamond Carriage Company, in Spokane, Wash.

V. A. Vincent has sold an interest in his vehicle and implement business in Newberg, Ore., to Walter Wilson.

A. E. Walker, of Des Moines, Iowa, has purchased the stock of vehicles, etc., of Miller & Burnett, in Woodward, Iowa.

The American Buggy Top Company, of Jackson, Mich., has been succeeded by the American Top Company.

H. C. & R. R. Johnston have succeeded Johnston Bros. in the vehicle and harware business in Superior, Neb.

Arthur Weckworth has purchased the stock of vehicles, etc., of A. C. Leizler, in Brantford, Kas.

The Pullman Motor Car Company, of York, Pa., has agreed with the Evansville (Ind.) Business Association to locate a large plant in the latter city, including motor boats.

Keefer Bros. have sold out their stock of vehicles and hardware in Green Valley, Ill., to Roy Auld.

IMPROVEMENTS—EXTENSIONS.

Havard Implement Company, of Giltner, Neb., has moved into its building.

Business at the plant of the Emerson Carriage Company, of Rockford, Iowa, is on the gain, and the large quarters of the company are proving too small. It has been found necessary to move some of the working departments to the west warehouse, where it had been intended to store any surplus stock that might be made up.

The deal wherein C. P. Kimball & Co., of Chicago, have acquired from Alfred D. Eddy and Robert W. Stewart the 300x161 feet at the southwest corner of Michigan Avenue and Thirty-ninth Street has been closed. The company also has secured about 100 feet to the south of this property, and on the entire tract it proposes to construct a building largely devoted to the automobile manufacturing business, the cost of which is placed at $500,000. It will also have a display room in the new building, but its principal salesroom and offices will be located farther north in the central district.

The Mandt Wagon Company, of Stoughton, a branch of the Moline Plow Company, is erecting buildings and additions to its plant, to the amount of $75,000. The foundry will be 80x200 feet and will be made of steel. The power house will be 51x121 feet and be built of brick. A three-story brick and frame workshop will also be erected.

The installation of new machinery and the construction of additions to the plant of the John W. Brown Manufacturing Company in Columbus, Ohio, is completed, and the betterments now made have practically doubled the capacity of the factory. The company makes automobile and carriage lamps.

The Studebaker Colorado Vehicle Company is putting in a branch house in Pueblo, Colo.

The Piedmont Buggy Company is preparing to erect a factory in Charlotte, N. C.

The Auto-Axle Company, of Fort Wayne, Ind., which will be ready to begin operations early in January, is being remodelled and re-equipped, at a cost of $7,500.

The work on the new building of the Electric Vehicle Company at Springfield, Vt., is rapidly progressing.

The Logan Carriage Company, of Parkersburg, W. Va., is planning to go into the automobile business as a side line. It is the plan of the company to remodel its establishment and to install a department for the repair of automobiles. Supplies will also be kept and a garage will be added. The company will remain in the carriage and harness business.

The addition to the Zeigler & Lampert Carriage Works at Ellwood, Pa., is completed.

The Mandt Wagon Company, of Stoughton, Wis., is erecting a new building of concrete on made ground, formerly the bed of the Gahara River.

Work was started on a large addition to the warehouses of the Anderson Vehicle Company at Fond Du Lac, Wis. The new building will be 90 feet long, 18 feet wide and 16 feet high.

The Eureka Bending and Wheel Works, of York, Pa., has been so crowded with orders during the past year, that an additional building will be added to the plant and extra machinery installed to meet the increased demand for this product. At present, temporary machinery is being installed to facilitate the filling of orders.

At Pekin, Ill., the Pekin Wagon Company has a fine prospect for next season, for already a very large number of contracts have been secured. A big deal was recently closed with a Minneapolis firm, and others have been made in cities in the North and Northwest. The prospects are that the factory will be com-

Digitized by Google

pelled to increase its capacity next year. The wagon trade has been rather dull for the past two years, but is picking up wonderfully of late, and the indications are that trade in this line will be very brisk the coming season. Manager Ebbetts is much encouraged in his travels about the country.

FIRES.

The O. Werman Wagon Company, of Morgantown, W. Va., has been destroyed by fire. The total loss is estimated at $7,000.

The recent fire at the works of the Mitchell Wagon Company, of Racine, Wis., will in no way effect the output of the 1910 model cars and no delay will be caused, as the company has a large stock of bodies on hand and arrangements have also been made through other sources for bodies of cars.

The loss to the Woonsocket Wagon Company, of Woonsocket, R. I., in its fire was $30,000.

The Farmers' Handy Wagon Works at Saginaw, Mich., was destroyed by fire. President McClure says the plant will be rebuilt as soon as is reasonably possible, and that it will be about the same size as the old. Fire yoss is estimated at $125,000.

The Gay Carriage Factory at Ottawa, Ill., has been destroyed by fire.

Fire occurred in the automobile repair department of the Lilly Carriage Company, of Memphis, Tenn., causing damage to automobiles and building of $30,000 to $40,000.

At Lagrange, Ky., two buildings occupied by Levi Waits as blacksmith and carriage shops, were burned. Loss $700.

Hedderly & McCracken at Minneapolis, Minn., suffered a loss of $5,400 by fire.

R. G. Green, of New York City, using the first and fifth floors at 150 East 129th Street, was damaged by fire to the extent of about $5,000.

KING EDWARD AND HIS CARRIAGES.

Among the members of his personal entourage, many of whom hold purely honorary positions, King Edward's master of the horse has really a great many things to look after.

The horse plays are quite an important part in court etiquette, and the royal stud at Buckingham Palace very often numbers as many as 200 animals, though on ordinary occasions it is reduced to about fifty. There are long ranges of stables, carriage houses. repair shops and the like, south of the palace.

State functions require both horses and carriages of certain types. For instance, all high court officials are conveyed to royal levees and balls in landaus and broughams. When ambassadors are to be presented to His Majesty, they are conveyed to court in carriages sent by the King.

Among the most interesting vehicles is the famous old state coach which is used for the most formal occasions. Its cost was $40,000, which included magnificently painted panels by the noted Italian artist, Cipriani.

Equally familiar, on state occasions, are the famous cream-colored ponies, which have been used for so long that they are almost a national institution. They have a stable all to themselves, and are quite the proud and haughty things in general.

These ponies are of a pure Flemish breed that is rapidly becoming extinct. They were originally brought into England by George I as emblematical of the sign of his house, the White Horse of Hanover, and have ever since been employed to draw the state carriages of the British sovereign. They have been inter-bred at Windsor to such an extent since they were first imported that they have greatly deteriorated in both size and strength, but some years ago it was decided to endeavor to improve them by the importation of new stock, and consequently representatives of the royal stable have been dispatched almost every year to Holland and Belgium to seek out young horses and mares of the necessary purity of blood to add to the stud farm at Windsor.

PERSONAL MENTION.

Mr. Berlin Hall, a prominent vehicle and implement dealer, has been warmly supported for postmaster of Manitowoc, Wis.

George A. Horner, of Grand Rapids, Mich., has become manager of the Rapid Motor Vehicle Company, at Flint, same state

Edward D. Barry, a well known carriage dealer residing at Gouverneur, N. Y., has suffered a stroke of paralysis. Mr. Barry is in his sixtieth year.

M. L. Rigby, who has been connected with the Racine-Sattley Company, of Des Moines, Iowa, has resigned and associated himself with the Brown-Williams Automobile Company.

Mr. W. H. Chadwick, a retired carriage manufacturer living in Boston, was married on December 28. The bride entered Mr. Chadwick's home as an infant, and was reared by the first Mrs. Chadwick.

Adam Reimund, of the firm of Reimund Bros., of Finlay, Ohio, has, as a result of a fall at the shop, broken one of his ribs. Only a year ago Mr. Reimund met with a similar accident at his shop, when he broke two ribs.

H. H. Bailey, auditor of the Imperial Wheel Company, at Flint, Mich., says, "We put out 80,000 sets of wheels the past year, and are in a position to handle a much larger production if necessary. I presume that nearly half of our wheels go to local concerns."

H. E. Lott resigned his position with the Tiffin Wagon Company, of Tiffin, Ohio, to take effect about January 1, and has accepted a position with the National Machinery Company. Mr. Lott was an employee of the old Tiffin Agricultural Works for fifteen years, and has been with the Tiffin Wagon Company about ten years.

Following the retirement of J. C. Mattack, of the Michelin Tire Company, at Middletown, N. J., J. Hauvette-Michelin has been elected vice president and general manager. Mr. Michelin is a man of long experience abroad, both in the manufacture and sale of Michelin tires. J. Hauvette-Michelin is a nephew of Edouard Michelin, the famous manufacturer of Michelin tires, whose factories are located in France, Italy, England and America. R. E. Glass, assistant treasurer of the Michelin Company, was made a director.

THE NEW MILEAGE BOOK.

With the new year the commercial man will make the acquaintance of a new universal mileage book whose features are thus described and explained:

It will be issued by the individual road, but will be of uniform type and adapted for use in States where varying rates of legal maximum fares are in force.

After careful consideration of the mileage book question, the roads adopted the report of the joint mileage committee of the Western Passenger Association and the Southwestern Passenger Mileage Bureau, which recommended a non-transferable descriptive book containing 2,000 coupons, to be sold for $40. Instead of representing miles, however, each coupon will virtually represent 1 cent, and will be honored according to the rate of fare in each State.

In the 2-cent fare States—Illinois, Iowa, Kansas, northern Michigan, Minnesota, Nebraska, North Dakota, Oklahoma and Wisconsin—one coupon will be detached for each mile. In States where the legal rate is 2½ cents—Arkansas, Colorado, Louisiana, Missouri, Montana, Texas and Wyoming—five coupons will be detached for each four miles traveled, and in New Mexico three coupons for each two miles.

Since the passage of the State fare laws the present forms of interchangeable mileage books and the individual books have almost fallen into disuse, because they represent no considerable reduction under the usual fare.

Digitized by Google

PROTECTED PRICES LEGAL.

This is the report of a decision by the Supreme Court of California in a case involving all the principles of fixed selling prices. The Court upholds the contention that a maker may establish and maintain a fixed minimum selling price. The decision is extracted as below:

The case stated by the complainant is this. The plaintiff has been engaged in the manufacture of pure olive oil by a process of his own discovery. Plaintiff has extensively advertised the fact that he manufactures a pure olive oil.

The defendant has bought of plaintiff olive oil under the express contract that the same should not be sold at a price or prices less than those fixed by plaintiff. He has, however, refused to comply with his contract. . The prayer is for an injunction restraining defendant from advertising, selling or offering for sale the oil at prices less than those fixed by the contract, and for damages.

In support of the ruling sustaining the demurrer it is urged that the contract relied on by plaintiff is unenforceable as being in restraint of trade.

Monopoly Defined.

We have here no question of an attempted monopoly. "A monopoly exists where all, or nearly all, of an article of trade or commerce within a community or district is brought within the hands of one man or set of men as to practically bring the handling or production of the commodity or thing within such control to the exclusion of competition of free traffic therein." The contract here relied on does not relate to any olive oil except that manufactured by plaintiff. While the plaintiff alleges that he manufactures oil by a process of his own discovery, there is nothing exclusive in the product resulting from this process.

Under these circumstances, we see no reason why the contract alleged by the plaintiff should not, as between the parties to it, be held to be valid. It violates no canon or public policy. By its terms the buyer is not precluded from engaging in any lawful trade. He may sell other olive oil at any price and on any conditions satisfactory to him. The producer was, in the first instance, under no obligation to sell his oil, and when he did sell it, had the right to exact, as part of the consideration for the sale, a promise by the purchaser that he would not sell it at less than a stipulated price. There is nothing either unreasonable or unlawful in the effort by a manufacturer to maintain a standard price for his goods. It is simply a means of securing the legitimate benefits of the reputation which his product may have attained. Contracts similar to the one under discussion have been considered in a number of cases, and have generally been upheld where, as here, they had no tendency to create a monopoly. Many of these decisions ,it is true, deal with contracts concerning the sale of patented or proprietary articles, and are based, to some extent, upon the principle that a monopoly right is inherent in a patent or in an article produced according to a formula known only to its manufacturer. It has been questioned whether the fact that an article is produced under a secret formula is of any importance in determining the validity of contracts regarding its sale. However this may be, we are cited to no case which holds that a contract like the one at bar is invalid as between the parties to it, whether it deals with an article produced under patent or secret formula or one that may be produced by any one.

The tendency of the modern decisions has been to view with greater liberality contracts claimed to be in restraint of trade. It is not every limitation on absolute freedom of dealing that is prohibited. Public welfare is first considered, and if it be not involved and the restraint upon one party is not greater than protection to the other requires, the contract may be sustained. The question is whether, under the particular circumstances of the case, and the nature of the particular contract involved in it, the contract is, or is not, unreasonable." "The tendency of the courts is to regard contracts in partial restraint of competition with less disfavor than formerly, and the strictness of the ancient rule has been greatly modified by the modern decisions." Many decisions announcing views similar to those declared in these quotations are cited with approval by this court.

The necessary result of what we have said is that the complaint must be held sufficient. It is alleged that the defendant bought oil under an express agreement that he would not sell it at less than given prices and that he had sold and threatened to sell it at less than such prices. This is a violation of plaintiff's right under his contract. Whether this contract could be enforced against persons who might come into possession of plaintiff's oil, without notice of the restriction imposed by him on its sale, but without having made any direct agreement to respect such restriction, is a question not here presented.

IMPORTATIONS OF HIDES AND SKINS DURING 1909.

Importations of hides and skins in the year which ends with the present month will aggregate nearly $100,000,000 and rank second in value in the list of articles or groups of articles imported. The value of hides and skins imported in the ten months ending with October, 1909, is, in round terms, $82,000,000, and should this average be maintained in the November and December figures the total value of this class of merchandise imported would aggregate practically $100,000,000, while the single item of importation likely to show a greater value—sugar—$84,000,000 worth imported from foreign countries in the ten months ending with October, to say nothing of the $56,000,000 worth coming from Hawaii and Porto Rico during the same period, but not classed under imports, since Hawaii and Porto Rico are now customs districts of the United States.

This total of practically $100,000,000 worth of imports of hides and skins which the figures of the calendar year 1909 will show will exceed by many millions those of any earlier year. The highest figures in value of importations of hides and skins in any prior year was $84,000,000 worth in 1906, the average during the past decade having been but $67,000,000 worth. The quantity imported during the year will exceed 500,000,000 pounds, while on no earlier occasion has the total reached the 400,000,000 line, the highest figure being in 1906, 399,000,000. Thus in quantity and value the importations of 1909 will be approximately 25 per cent in excess of those of the previous highest record year, 1906. The average monthly importation of hides of cattle in the period since the new tariff act went into effect, August 5, 1909, has been 24,500,000 pounds, against about 19,000,000 in the seven months immediately preceding that date.

The growth of importation of hides and skins into the United States, an agricultural country, has been a marked feature of the import trade. The value of hides and skins imported in the fiscal year 1890 was, in round terms, $22,000,000; in 1900, $58,000,000, and in the calendar year 1909 will, as above indicated, be approximately $100,000,000; while the quantity imported, which in the calendar year 1900 was but 307,000,000 pounds, will in 1909 exceed 500,000,000. One especially interesting feature of this development in the importation of hides and skins is found in the fact that nearly one-third of the value of this large total consists of goat skins.

VERY GRACEFUL GIFT.

As a Christmas remembrance from the Durant-Dort Carriage Company and the Imperial Wheel Company, both of Flint, Mich., to the Vehicle Factory Mutual Benefit Association, Secretary M. F. Staples, of the latter organization, has received a check for $500.

The money will be used for the payment of assessments of the employees of those companies in case of sickness or accident at any time in the future.

The Corliss Motor Company has been organized in Corliss, Wis., with a capital of $1,000,000.

Digitized by Google

RUBBER WILL ROOST HIGH.

The statistics on crude rubber are calculated to make the buyer and user of tires have quite a calculating spell. We give, herewith, the latest details of the industry, as gathered from government sources:

Importations of India rubber into the United States in the year just ended will exceed, in both quantity and value, those of any earlier year. During the ten months ending with October, 1909, the importations of India rubber (including "balata," gutta-percha and "gutta-joolatong") reached the record total of $62,000,000, exceeding by over $6,000,000 the total for the entire calendar year, 1906, the banner year in this feature of the import trade. For the single month of October the imports of India rubber were valued at over $8,000,000, and should this rate be maintained during November and December, the total for the twelve months ending with December, 1909, would be over $75,000,000, as against $46,500,000 in 1908, $54,000,000 in 1907 and $56,000,000 in 1906.

This increase in the value of India rubber imported is due, in part, to the advance in price following the enlarged demand in various parts of the world, and especially in the United States, which consumes fully one-half of the world's output of India rubber. Thus, while the quantity of India rubber imported has increased from 32,000,000 pounds in 1889 to 55,000,000 in 1899 and 73,000,000 in the ten months of 1909, for which figures are available, the average import price has advanced from 39 cents per pound in 1889 to 60 cents per pound in 1899 and 80 cents per pound in the elapsed months of the present year, while for the single month of October the average import price was practically $1.00 per pound.

The import price of the crude rubber brought into the United States during the ten months, for which figures are available, has exceeded that in any earlier year, having averaged 80 cents per pound in the period in question, while the highest annual average in earlier years was 78 cents per pound in the fiscal year 1906, 76.6 cents per pound in 1907 and 74.2 cents per pound in 1905, the import prices prior to that time ranging from 68 cents per pound in 1904 down to as low as an average of 38 cents per pound in 1889.

Of the $62,000,000 representing the importation of the various classes of India rubber in the ten months of 1909, for which detailed statistics have been completed by the Bureau of Statistics of the Department of Commerce and Labor, $58,500,000 represented India rubber proper; $2,000,000, scrap rubber, fit only for remanufacture; $1,000,000, gutta-joolatong, an article similar to, and mixed with rubber, for use in various industries; $357,000 balata and $123,000 gutta-percha.

IMPLEMENT MEN MEET.

Upwards of 4,000 retail dealers in vehicles and implements met in Kansas City, Mo., January 10th. It was the twenty-first annual convention of the Western Retail Vehicle and Implement Dealers' Association, including in its membership practically all of the retail dealers in the lines mentioned in Kansas City's trade territory. The Coates House was headquarters; the meetings were held in the Century Theater.

Many manufacturers were also present. They have rented space at the Coates and in other buildings convenient for the delegates, where they will display exhibits.

The stock of vehicles, etc., of J. B. Tawney, of Sandy, Ore., has been destroyed by fire.

C. F. Van Alstine, of Kilbourn, Wis., sustained loss by fire amounting to $8,000. Insured for half.

The American Wagon Company, of Augusta, Me.; capital $1,000,000; incorporated by R. S. Buzzell, E. J. Pike and C. L. Andrews.

A CHANCE AT TURIN.

Turin, Italy, is like Detroit, it is the seat of probably the biggest end of the Italian motor car industry. There is to be a show there in April, 1910, and the chance for doing business, especially for accessory makers, is thought to be good.

Americans should give this fact careful attention, and should remember further that the exhibition will be visited not only by every Italian maker but by a large number of foreign makers as well.

There is an important market for lightweight cars and runabouts in Italy, and many Italian agents are ready to undertake their sale. Cars of this type should have as long a wheel base as possible, should be fitted not with one but with two or more cylinders, and should be driven by magneto ignition. Agents are especially anxious to obtain an American car costing less than $1,000.

The exhibiting of automobile accessories of all sorts, and of machine tools, is perhaps a matter of even greater importance than the exhibiting of cars. Interest is now and then expressed concerning accessories described in catalogues, but little business results therefrom. In the vast majority of cases American accessories have yet to furnish actual proof of excellence in Italy. This cannot, of course, be done by catalogue, and the Turin manufacturer and agent who every year examines thoroughly a great number of accessories at the annual exhibition is little tempted to speculate upon the possiblity of finding better articles somewhere far afield.

THE LIFE OF BUSINESS.

The man who "never did business like that" is gradually weeding himself from the mercantile field. When confronted with the problems of the present and having suggested to him certain sources to pursue, says Toys and Novelties, he puts up the plea that he has never done business that way, has heretofore been successful and sees no reason why he should modify, change or add to that which has fetched him where he is. He keeps on for a while in the way he is going, and, although he insists that he is doing good business, he knows that something is wrong somewhere, but he still sees no reason for adopting new-fangled ideas. If we can't make up our minds to do the things of to-day as the necessities of the day demand and shape our methods according to the particular requirements of the present, we will sooner or later find that he who has a way of his own of doing things, and persists in doing things that way under any conditions, will get left far behind in the race for business. A man goes to bed with a clear conscience that he has fixed his business properly for the problems he has contended with during the day, but he wakes up to his business the next morning with some new series or sets of troubles confronting him that demand other treatments. Ignoring or passing over won't rid his business of the annoyances, and because he didn't have them to contend with ten or twenty years ago, he fools himself expensively if he attempts to let them go unnoticed and unconquered. It doesn't make any difference how we did business some other day, the problems of to-day are the ones that demand our attention to-day, and if we don't know how to handle them, it is up to us to find out immediately.

FINE NEW CATALOGUE.

The F. A. Ames Company, Owensboro, Ky., in a new catalogue just issued says in the preface, "There is a reason for every result—a cause for every law. Great business growth is the direct result of good management and genuine merit in the product. One is the fulcrum; the other is the lever."

Everyone knows something about a concern that in 1887 had an output of thirty-seven vehicles, and in 1909 increased it to 25,000. Must know about such people, the buggies simply crowd themselves on the dealers' attention.

This latest catalogue is comprehensive, satisfying. Get it.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

American Motor Car Manufacturers' Association Exhibit.

One of the most interesting shows New York has so far witnessed was the A. M. C. M. A.'s exhibition at the Grand Central Palace, December 31 to January 7.

We present on this page the scheme of decoration, which was light, graceful and well adapted to show the cars to best advantage. The idea was not to deflect the attention due the exhibits to gorgeousness of decorative display, that was merely a setting to make the main feature of the show more attractive still. Part of the scheme of decoration was painting at the back spaces scenes, road and country, to keep the idea of touring present in the mind. This is shown as a part of our illustration.

As many of the cars exhibited were foreign made, an effort was made to make some of the decorations international in character, and Italy, France and Germany were searched for floral novelties that were in a way symbolical of the countries the cars represented.

Outside of the trellis garden idea, the decorative scheme involved a lattice and landscape effect, with the whole set forth by tens of thousands of glittering lights and huge chandeliers of electric balls of fire threw the pictorial scenes and the cars themselves into high relief.

One of the most spectacular features of the decorative scheme was a huge electrical marble fountain. Back of the fountain was a large plate glass mirror and surrounding the two was a beautiful Peristyle of green trellis work, some forty feet in length. At the base of the fountain and surrounding the Peristyle were growing trees, shrubbery, potted plans and flowers. The color scheme and decorative effect were nile green lattice work on a soft caen stone background, while the roof simulated a large trellis arbor hung with grape vines, through which blue sky was faintly seen. The illumination was by scores of electric alabaster globes suspended by chains from the roof of the arbor.

The floor covering was of soft green tone, of a specially woven fabric, and harmonized with the garden furniture of the early English period used in all of the booths.

Cars made by the concerns named below were on exhibition, and will be the subject of future comment:

Abendroth & Root Mfg. Co., Acme Motor Car Co., American Motor Car Co., Austin Automobile Co., Atlas Motor Car Co., Bartholomew Co., The, Brush Runabout Co., Buckeye Mfg. Co., Cartercar Co., Chadwick Engineering Works, Dayton Motor Car Co., The, Dorris Motor Car Co., Ford Motor Co., Gaeth Automobile Co., Grabowsky Power Wagon Co., Holsman Automobile Co., Hupp Motor Car Co., Jackson Automobile Co., McIntyre, W. H., Co., Mack Bros. Motor Car Co., Marion Motor Car Co., Maxwell-Briscoe Motor Co., Midland Motor Co., Mitchell Motor Car Co., Moline Automobile Co., Moon Motor Car Co., Mora Motor Car Co., National Motor Vehicle Co., Nordyke & Marmon Co., Oakland Motor Car Co., Ohio Motor Co., Overland Automobile Co., Pennsylvania Auto-Motor Co., Pierce Motor Co., Premier Motor Mfg. Co., Rapid Motor Vehicle Co., Regal Motor Car Co., Reo Motor Car Co., Speedwell Motor Car Co., Simplex Motor Car Co., St. Louis Car Co., Welch Motor Car Co., York Motor Car Co.

VEHICLE ASPECTS OF AUTOMOBILE SHOW.

We have given the customary space in other parts of this issue to the general aspects of the tenth annual exhibition of automobiles and accessories, held in the Grand Central Palace, New York City, the week of January 3-8.

Speaking generally, the most salient point is the effect of the influence of the carriage builder on the industry.

In the beginning this influence was entirely wanting, but as the automobile has developed, it has attracted the attention and service of the carriage builder with the most pleasing effect.

In the show, under notice, the beautiful, substantial and best considered body designs were uniformly the results of the efforts of carriage body builders.

When examples of the shocking were found, it was always a case where the carriage body builder could assert he was not guilty.

There were the usual quota of foreign-built chassis in this show. In some instances the body was the output of a foreign shop, also. In most cases the body was of American make and fashion and suspended here.

The first-class foreign carriage builders, such as Kellner, Rothschild, Pingret, etc., were worthy competitors of our own Brewster, Healy, Hooker, Quinby and others, and the honors were very fairly divided.

The striking thing was the excellence of design, elegance of finish, and in some cases, notably in some of the Brewster jobs, the very careful working out of the details of the design to meet the many conditions of use that would never occur to one who merely looked at the subject theoretically.

Here was where the carriage body builder was strong in contrast with the maker who knew nothing about the business until he "got into the game," which expression very fitly characterizes the industry yet. When the exuberance of the youth of the business wears off, and it becomes a matter of acquiring a competency in many years in place of a fortune in a fortnight, these matters will assume another phase.

The gems in the foreign "salon," which, being interpreted, was one side of the first floor, were the De Launay-Belleville (Brewster & Co.) exhibits, the Renault, the C. G. V., Isotta (Quinby & Co.) and Clement.

The Clement-Bayard people showed a flying machine model "on the side," but the gem was a Healy limousine of most attractive design, broadcloth trimmed and of a finish that lent a distinction that could not fail to attract admiration.

J. M. Quinby & Co., having the Isotta interests in hand, showed several handsome jobs. But no special effort was made for show purposes. The Quinby people are enthusiastic supporters of metal body building for car purposes, and they certainly have made an art of it following their methods.

Digitized by Google

An interesting job, for physician's use, or anyone who fancies being his own driver, was an English body mounted on a Lancia chassis. This job presented good features. The driver's seat could be tipped, permitting ingress from the steering wheel side, as well as the opposite one. In the front on one side was an extra small seat, making the body comfortable for three passengers. A dickey seat for the "buttons"—one could hardly call him a groom—was a feature.

As a piece of good body building and attractive trimming, this job was entirely satisfactory, but our English friends could not have been at their best when they projected the design on the blackboard.

The contrast to this was a job shown in the Renault space. This was also an inclosed steering and operating apparatus, but the French designer in Kellner's Paris shop was at his best.

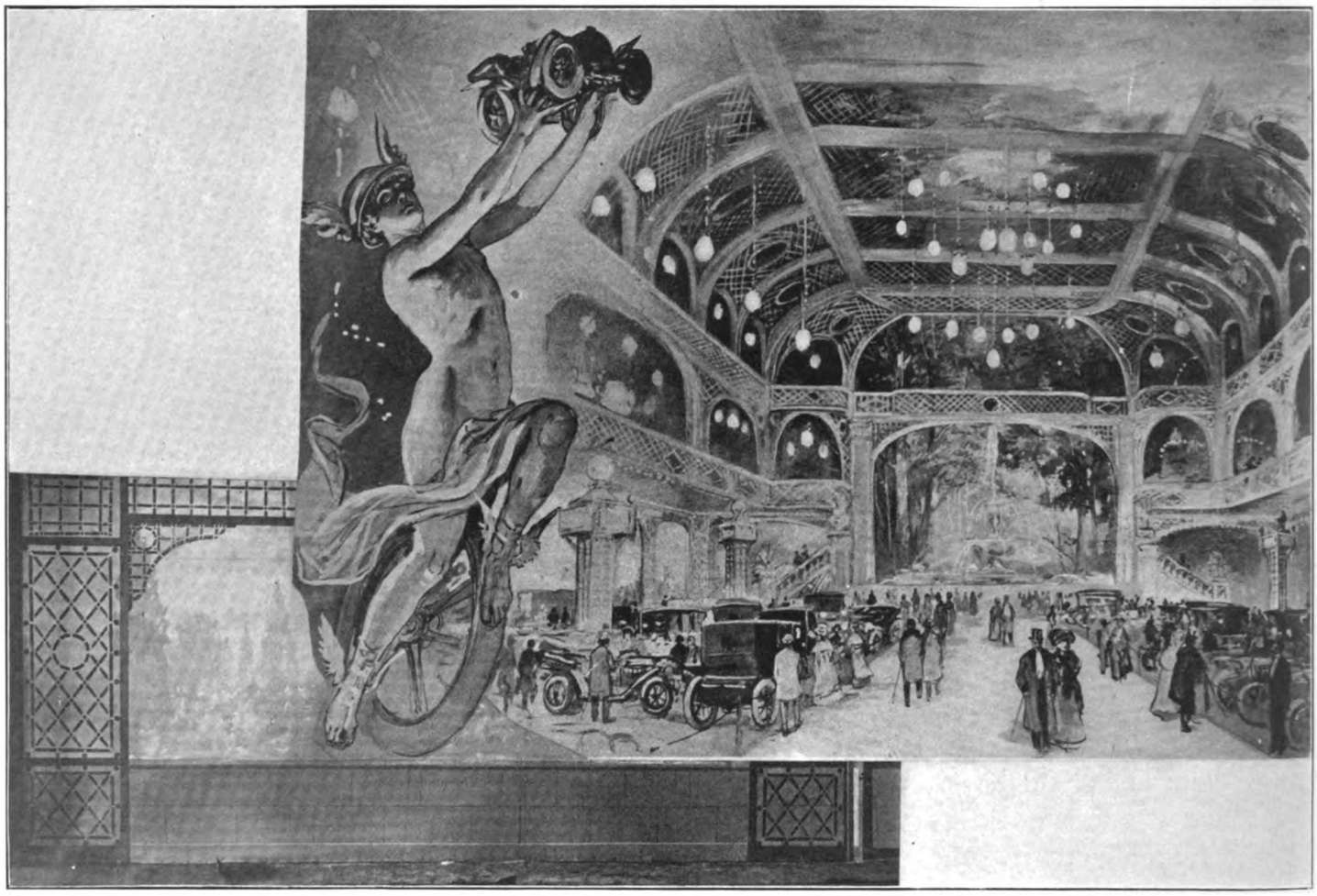
The enamel leather top and quarter panels, the design showing graceful curves, both on roof and underside, the careful reduction of weight, without impairing strength, and the altogether graceful look of the job, was a real treat to the beholder.

Opposite the Charron (C. G. V.) had a pretentious car on which a closed Pingret body was mounted. Here was true elegance, almost to dainty for daily use, unless milady was in her best bib and tucker on every occasion, but the cream shade of the broadcloth, the attractive design of the coach lace patterns and the perfection and skill of the trimming made the job look fully the $7,000 paid for it.

Brewster & Co. made no special preparation. With them, every job turned out is a show job, so there can be no extra effort. The salient feature of the exhibit was a touring, or tonneau, body that could be front inclosed by means of folding pillars, and full doors could be had by the adaptation of an old and useful carriage idea, popular years ago, and fitting the present circumstances with the force of novel originality. This touring car was in all respects the most perfect example of such a vehicle to be found in the show, and contained so many points of excellence that would develop in good use to the comfort of the user, that it almost marks an era.

As also marking an era, let us turn and contemplate the latest craze, the gunboat body.

Like all new things fashion-wise, the tendency is to approach extremes. So far as our observation goes, the extreme for the moment was reached in one car, that was the most perfectly hideous mongrel of a bathtub, or coffin, that could be imagined. And yet it seemed to attract much admiring attention. Nothing could better point a contrast between a body builder of real taste in design, and this nightmare of some tin can factory, or dream of an engineer, whose only thought was metal and plenty of it.



Decorative Scheme at Auto Show at Grand Central Palace.

Aside from these present fashion cars, which will soon run their course, is to be noted the usual model that has been most lavishly decorated for some one of fortune's favorites, usually some lady who basks in the spotlight of theatrical favor. One car of this kind was trimmed with leather stamped in imitation of the skin of some reptile, and the pockets, flaps, falls and panels were touched with color, as if by hand. Rather pretty, very freakish, but by no means in good taste, or anything a conscientious body builder would venture to produce. Another instance demonstrating that the "game" of automobile making and selling is in the ascendant.

It was a relief to turn from such examples to the product of a factory that is also a maker of horse-drawn vehicles on a large scale, and look at the finish, the lines, the generally fine

Digitized by Google

effect of the gas motor and electric vehicles shown, selling at a moderate price.

An interesting item was the modification of the methods of suspension. There seems to be a better appreciation of the advantage of using the full elliptic spring. Sometimes it is clipped under the axle, oftener above, and one of the gunboat felloes, using 42-inch wheels, just reversed the order of suspension by putting the spring over the axle, inside out, and suspended the chassis below the axle. It was as if the usual practice was turned bottom side up.

Curiously, most all of the cheaper priced cars were shown with bodies of the touring type, and as there has been no distinct departures, they looked almost as much alike as so many factory buggies, and called for close inspection to detect any advantage of finish or workmanship, one over the other.

The motor truck wagons were very much in evidence, and indicated much progress over previous shows. The variety of business vehicle was larger, and the range of ability ran from five-ton trucks to light delivery. Even a pay-as-you-enter bus of excellent design was shown, and it had every appearance of carrying its load of sixteen seated passengers in comfort, and there was head room enough to allow of standers.

There is a process of refinement going forward in the native power shown. The engine is getting the benefit of much experimenting, and it extends to all parts, including ignition systems.

The foreign machines, we think, were more in advance in the simplification of parts than the native product, and seemed to show the results of closer study.

The American single-cylinder machine made its bow to a public of smaller means, and the car was able to gather a "gallery," as they say in golf, that seemed to be anxious to know all about what could be bought for $480.

The chassis is completely of wood, and even the axles are of the same material. The car has sustained severe reliability tests, and ought to be a welcome vehicle to those who have only little journeys to take.

It is simple in construction, and like the two-wheel cart of long ago, looks as if it would wear well until it falls to pieces.

The Ford people have some new applications of old ideas in their engine that are ingenious and bound to work out to the profit of the mechanism and the comfort of the driver.

The accessory man is the active factor these days. There is such a decided advance in ideas, such an ingenious application of clever thought, and such an evident march along the line of supplying the maker of automobiles with about all he needs, that the day is approaching when the maker catering to moderate priced trade will be nothing much more than an assembler. Frames, axles, gears, ignition systems, cylinders; indeed, everything, except the body, may be purchased ready made at this day, and of very high grade material.

The accessory man is a most interesting factor, and it will be largely through his persistent thought and energy that the "game" will finally become a business on very stable lines.

The motor trade is making very great strides, and these exhibitions afford fine chances to score progress by observation and comparison. They are most interesting as milestones of progress.

In the early stages we had the dress-suit (meaning evening clothes), the ever-present cigarette and the overflow of jocund youth. Something was "swell" or it "hit the high spots," etc. We still have as a survival "classy," which is worked overtime, but we seem to be down to business wear for business purposes, the smoking habit is more honored in the breach than the observance, and even in the personnel there is getting to be less of the "game" and more of the elements of a stable business proposition.

In the palace show more attention was devoted to European types than will be true at the Madison Square show. It is this feature which entitled the former to be termed an "international" show. While the exhibits of the importers at the palace was perhaps less striking than in the recent London show, the display contained many of the features that made the Olympia exhibition the greatest ever held across the Atlantic. It is to be remembered that the lack of automobile shows this season in Paris and in Berlin lent particular importance to Olympia as an exhibition place for novelties in European automobile construction. There were in the palace show, it is estimated, foreign cars totaling in value nearly $500,000.

The tendency is toward the use of larger car wheels, and of larger tires, not only in diameter, but in cross section. Not even the higher cost of rubber—and this does not lessen the cost of tires—has checked this tendency. It has been admitted on all sides that too many cars have been equipped with pneumatic tires of too small dimensions for economic or even safe operation. These two considerations appeal to the intelligent motorist—when supported by the prominent tire makers—and the larger tire comes into use as a matter of course.

There were cars at the Palace show equipped with pneumatics ranging from 28x3 inches to 40x4 inches, the smaller being applied, of course, to the machines of lighter weight. The striking feature of the show was the prounounced use of 36-inch tires, both in the 4-inch and the 4½-inch section, there being fourteen exhibitors listing these sizes, both front and rear. Tires of 5-inch section were shown on machines, on wheels with diameters from 36 to 39½ inches. But all the tires of more than 36 inches in diameter are used only on the largest and highest powered cars. The 34x4-inch tire is most common on "popular priced" cars.

Designers, working steadily on the problem of the internal combustion engine for several years, have brought it to approximate perfection. They have labored equally hard in the endeavor to deliver power most efficiently to the driving wheels. In the matter of transmission they have practically reached the limit of their powers. In other words, the average chassis of 1910 will be very much like the average chassis of former years.

The alterations from preceding types were in the line of simplification and refinement. The gasoline motor is at best a complicated piece of machinery. To reduce its number of parts and to make those remaining more stable and less susceptible to trouble has been the principal aim for the last three or four years. Contests during the year, in which cars have run for hundreds of miles without developing engine trouble, show with what success designers and manufacturers have worked.

With their efforts to attain the utmost efficiency in motors the designers have gone steadily ahead in making the automobile as a whole easily understood and its various parts easily reached when difficulties develop. Very rarely does a driver have to crawl under his ear in these days. More and more is it becoming a fact that every part liable to get out of order can be reached quickly, the seat of the trouble uncovered and repairs effected in short order.

While on every hand, it was evidenced that the small car is making rapid strides in popularity, the makers of more expensive cars are enjoying greater prosperity than ever.

What visitors to the show found the most striking of 1910 tendencies in the complete automobile was undoubtedly the alteration of body shapes. Builders of bodies have gone far afield in the effort to produce designs to suit the admirers of novelty, although, of course, their work has been in the direction of utility and comfort. The more general use of the automobile as an all-the-year-round vehicle has been responsible for the pronounced variations in body design, and so strongly have users favored the more recent styles that in a year or two the entire appearance of the car may be changed.

The enclosed touring body, described variously as the "torpedo," "gunboat," or, by the conservative, as "fully enclosed," is the very latest. Heretofore, in both open and covered cars, the effort at protection of occupants has been confined to the rear, or tonneau, seats. In front, the driver and his companion have depended for warmth in inclement weather on robes or blankets, an unsatisfactory barrier against cold, since the work-

Digitized by Google

ing of the foot levers makes it impossible to keep these coverings in place.

Whatever the ultimate design, the object of the enclosed touring body is admirable and the early types are creditable. Apart from the added comfort, the innovation adds greatly to the racy appearance of a car, so much desired by the average automobilist, whether his machine is speedy or not. That the new type of body will appeal to producers of low priced cars is considered improbable.

In limousine bodies the height of luxury appeared to have been attained some time ago, but there were innovation seen in these for the trade of 1910. What they consist of will be gone into more fully in the February issue of The Hub. There were many changes to the form of improvements in springing, with slight alterations in the position of seats and other inside fittings intended to afford increased comfort.

MOTOR CAR SPRINGS.

There have been many problems to solve in making automobile springs. The service is severe, owing to the high speeds demanded, and the frequent change of load.

The "Sibley Journal of Engineering" has gathered some data that is to an extent interesting. What it says about the construction of carriage springs being a practice not in accord with the needs of the motor builder, may be derived from just conclusions, but we have noticed the more the spring is made to take on the characteristics of the carriage spring in the motor car, the more ease, the fewer fractured leaves and the better life seems to result.

The carriage builder had all the problems of load and suspansion to think about and successfully solve. He was not up to forty-mile an hour speed requirements, but even in this the auto builder had to resort to a device of the carriage builder to keep his springs intact. Here is what is said:

"The investigation and practice of the members of the Association of Licensed Automobile Manufacturers, as to the springs which carry their car bodies and frames make a very interesting tale. Many grades of metal, domestic and foreign, have been used, including chrome nickel steel and steel containing chromium combined with tungsten, vanadium, etc. With special alloy steel, a very superior article can be produced, provided the requirements of heat treatment are followed. By some it is advanced that silico-manganese steels will endure longer than high carbon steels. Springs of certain specified analysis are to-day being made, which will successfully withstand any test to which they would be subjected.

"Typical practice is to have the proper ingredients in the initial product, insisting upon a strict maintenance of this standard when the product is delivered, following with a standardized method of treatment all the way through, including the requirement that the spring will take only so much set under the first test and then stay there. It is necessary to have the furnaces, in which the steel is treated, under pyrometer control, with very slight variation in temperature allowed; and with a so-called 'soft' heat, not harsh or severe, as to which the kind of fuel employed is important. The most commonly used heat treatments are annealing, hardening, tempering, hardening and annealing, double annealing, and double hardening and annealing.

"It is contended by some producers that a spring with the least arch; that is, the nearest flat, is the safest spring, if enough room for the proper amount of deflection is reserved. This is on the theory that the greater the arch the greater is the fiber strain in a spring. In connection with front springs, one authority states they should, to preserve proper resiliency, not be thicker than their width; should be fairly stiff, with a maximum deflection of not over one-quarter of an inch per hundred pounds; not off-centered; and have the front eye set higher than the rear eye not less than one-half inch, this latter preventing the car from ducking. That in rear springs, where the problem is relatively easy, the length and width should be as great as possible, if made scientifically as to the spacing of the leaves, the length of the taper and the grading of the steel. There can be made a spring that will take certain dimensions under a given load, and ten thousand other springs which will take the same dimensions under the same load, but it is essential that they have a large number of leaves of special grade steel, specially tempered, with an absolutely correct grading, so that there will be spring play from the center of the eye to the center of the spring.

"It has long been seen that the carriage spring steel of the last quarter of a century will not do for automobile springs. And successful experiments of the last ten years have given us various satisfactory designs for automobile springs, securing rliability and ease of riding with lower suspension of the body.

"The weight, the speed, the traction feature and the variation of passenger load are elements that never until the case of the automobile, existed to the same extent in any one vehicle."

MOTOR HEARSE.

Built by Jas. Cunningham Son & Co.

(Illustrated on opposite page.)

This is an example of hearse building adapted to self-propulsion methods, most pleasing in design, and, of course, very thorough in construction, as the maker has a reputation for heavy work that has been upheld for years.

The rayed panels, shown behind the wide glass spaces, are removable at will. The interior is finished so as to give the effect of mahogany. There is a removable rack for carrying chairs, and, indeed, there are conveniences that the size of body does not allow in the ordinary hearse.

The driver's seat is leather trimmed, and the lamps and other details are what should be found in a job of this kind. The underbody and motor specifications are given by the makers, and are herewith appended:

Motor: 40 horsepower. Four cylinder, four cycle, water cooled; cylinders cast in pairs; bore 4¼, stroke 5.

Carburetor: Schebler.

Ignition: Double system by coils with storage battery, and high tension (Unterberg & Helmle) magneto.

Clutch: Cone type, leather faced.

Transmission: Selective; three speeds forward and reverse.

Drive: Through propeller shaft, bevel gear; universal joint; 4 to 1 ratio.

Lubrication: Splash system.

Front Axle: "I" beam type, drop forged.

Rear Axle: "Floating" type.

Steering: Enclosed in dustproof case and fitted with mahogany steering wheel. Steering joints provided with spring buffers to relieve road shocks.

Brakes: Internal and external on rear axle.

Bearing: Ball.

Control: Controlling levers for sparks and throttle located on top of steering wheel; all gears changed by one lever located within easy access of driver.

Frame: Chrome nickel steel.

Dash: Straight, mahogany.

Wheel Base: 126-inch.

Tread: 56-inch.

Wheels: 34x4½ front and rear.

Rims: Quick detachable.

Gasoline Capacity: 20 gallons.

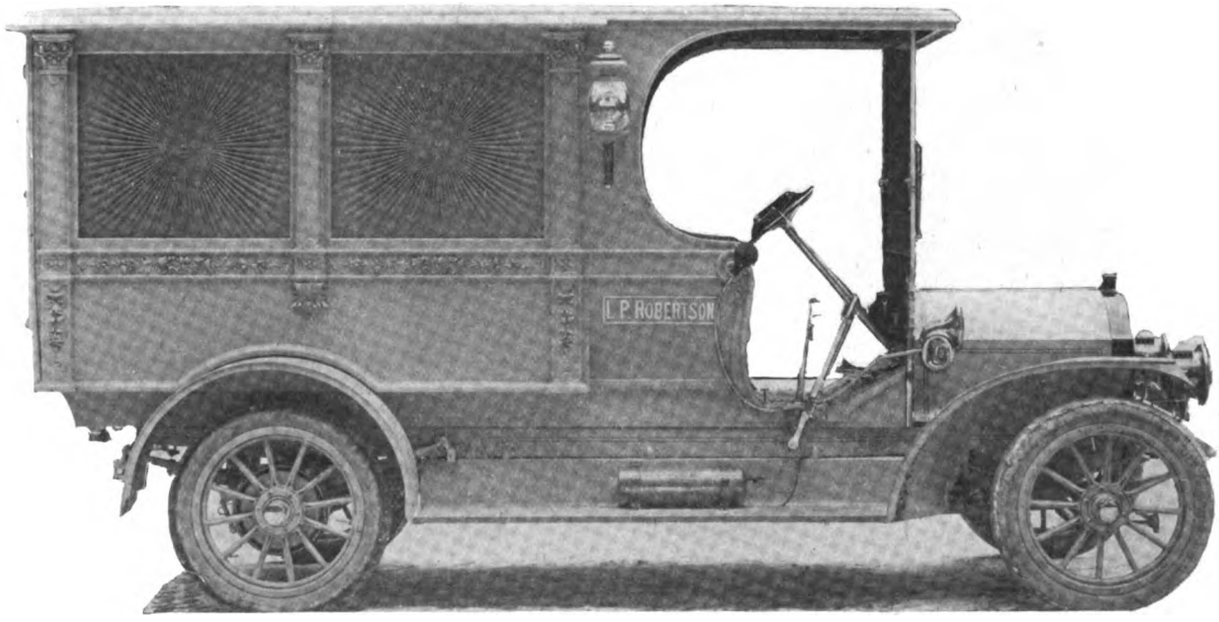
Water Capacity: 6 gallons.

Equipment: Two searchlights and gas tank; one rear light; one horn, tool box, one full set of tools.

The only incongruous detail is the horn. In this we may be mistaken, however, if it is intended to be useful in an attempt to call the attention of the "fare" to the sound that Gabriel is expected to utter when he does his Last Day solo.

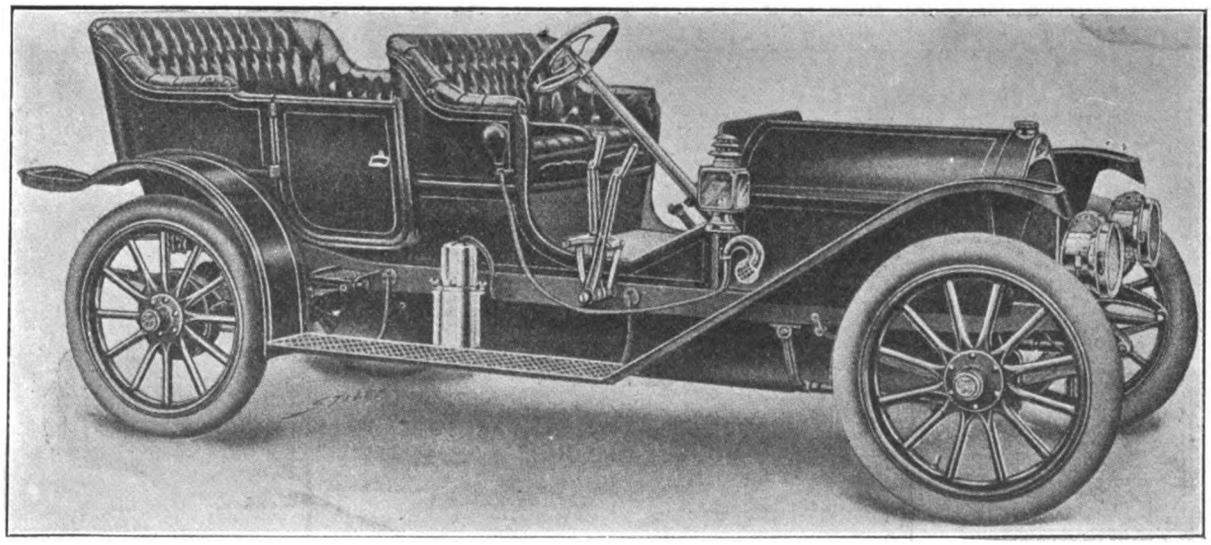
Digitized by Google

Illustrated Automobile Section, January, 1910.



MOTOR HEARSE.

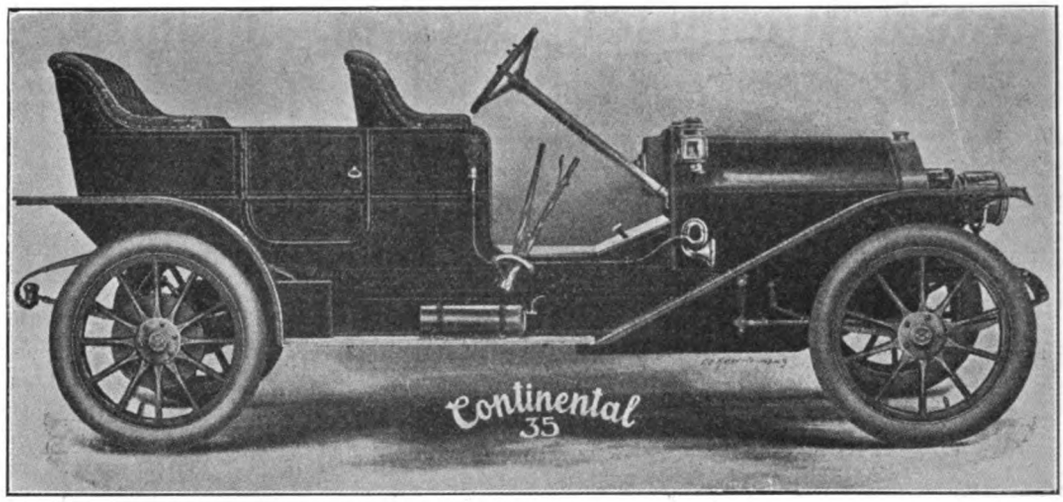
Built by James Cunningham & Son, Rochester, N. Y.
(Described on opposite page.)



CUTTING FIVE-PASSENGER AUTOMOBILE.

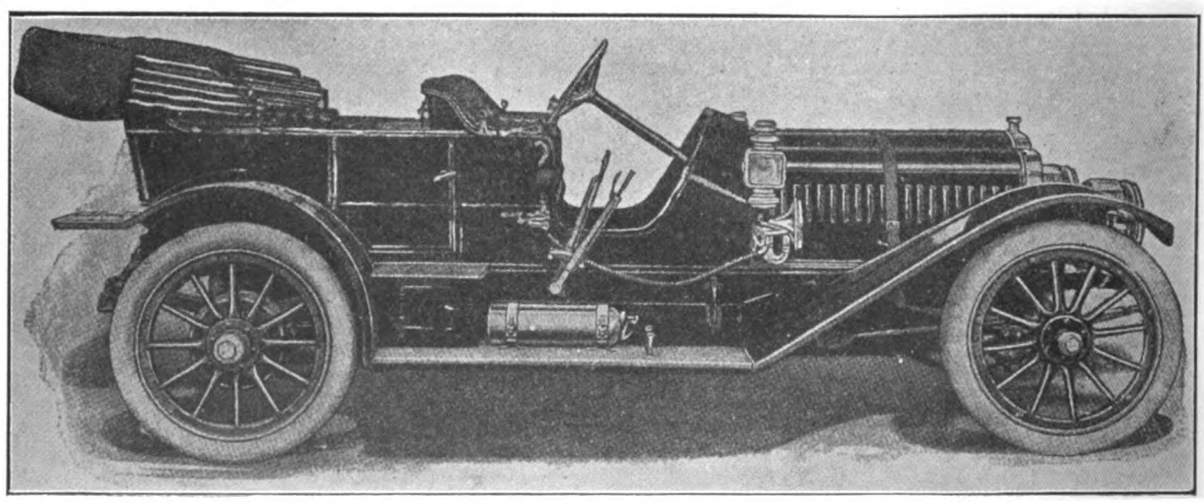
Built by Cutting Motor Co., Jackson, Mich.

Digitized by Google



THIRTY-FIVE HORSEPOWER CONTINENTAL.

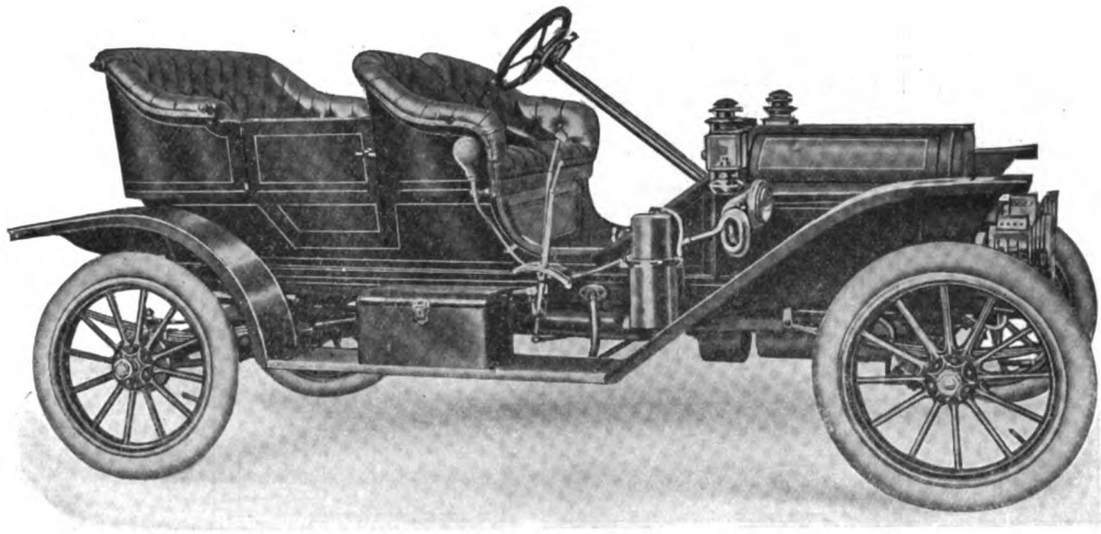
Built by Indiana Motor and Mfg. Co., Franklin, Ind.



STANDARD SIX-MINIATURE TONNEAU.

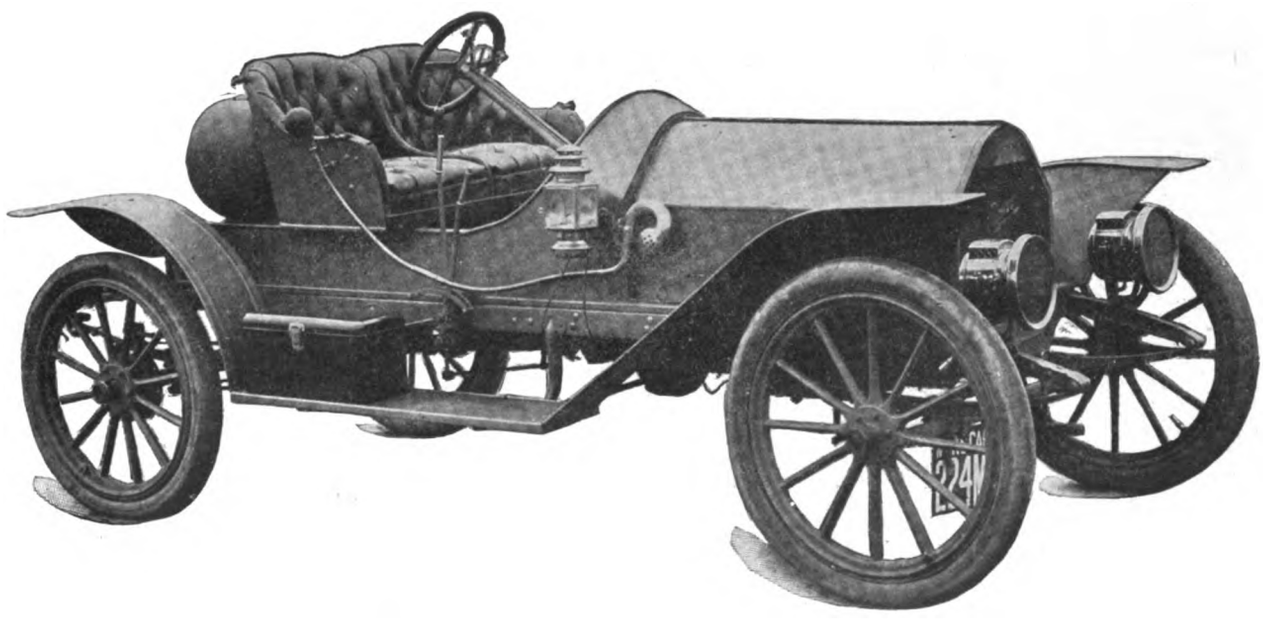
Built by St. Louis Car Co., St. Louis, Mo.

Digitized by Google



CAMERON TOURING CAR; AIR COOLED.

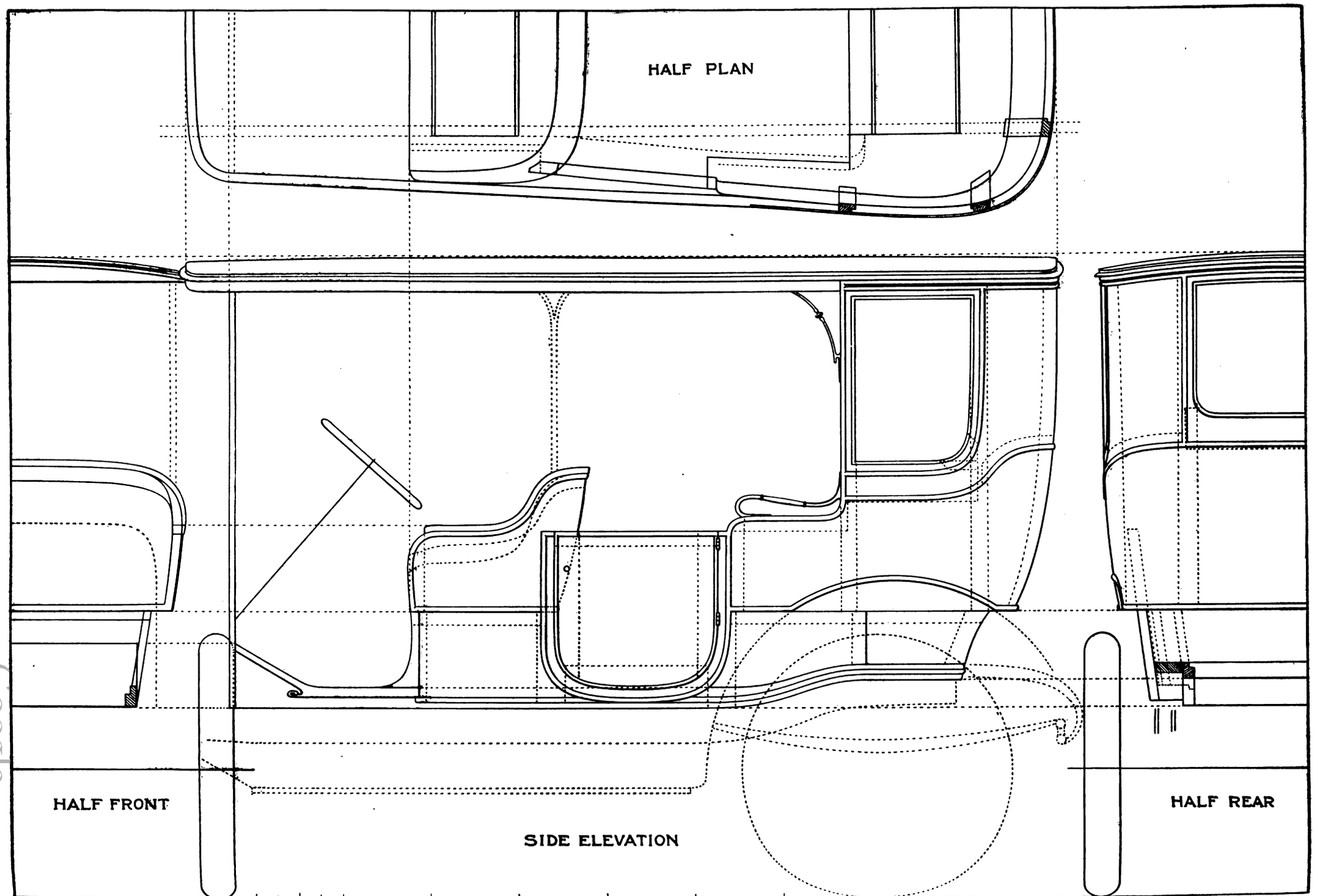
Built by Cameron Car Co., Beverly, Mass.



CAMERON "SIX FLYER"; AIR COOLED.

Built by Cameron Car Co., Beverly, Mass.

Digitized by Google



WORKING DRAFT OF DEMI-LIMOUSINE.

(Described on opposite page.)

Digitized by Google

Body Construction and Finish

DESCRIPTION OF WORKING DRAFT OF DEMI-LIMOUSINE.

(Draft on opposite page.)

As the season for securing further orders for landaulets and limousines is practically over, the body builder must turn his attention to obtain orders for touring bodies, runabouts, etc., for spring and early summer delivery.

Of the many different styles of bodies that have been brought forward to accommodate the needs of the motoring public, none have been more practical, or have permitted of the harmonious blending of lines to better advantage than the demi-limousine.

The demi-limousine is simply a touring car body with a built up or semi-enclosed back end, which serves to protect the occupant most effectively from dust, and when the side curtains are tightly buttoned, these, with the top—which is a permanent fixture with the back—a serviceable winter car is quickly transformed, which answers its purpose, except in very cold weather.

The accompanying illustration shows a demi-limousine body made to fit one of the newer type chassis with bent frame. The body space is generous, being 98½ inches long by 34 inches wide; wheel is 87 inches back from the dash to the center, and this permits of good proportions to the body.

The dimensions of the body are 24 inches from dash to the front seat, front seat 20 inches deep from back to front on the seat board, height of same on side 11 inches, height at back 19 inches, width across seat board 44 inches; this allows for a goggle pocket, with 3-inch opening, in center of seat; distance between front and back seat in tonneau 40 inches. Rear seat dimensions are, sides 13 inches high back of door, height to top of moulding under window on side that forms seat line 15 inches, height to same point on back 22 inches, width across seat at widest part on seat board 51 inches, height from top of seat board of back seat to under bow in center 46½ inches, sweep of top 2 inches, door opening 22 inches, size of hinges 1¾ inches.

Description of construction: The frame is of wood, the seat frame being ⅞ inches ash and the rail around the upper part of seat being 2 by 1⅛ inches. The under body framing is 1¾ by 1⅛ inches and the door is 1½ inches thick. Aluminum panels are used, 14 gauge on the seats and 16 gauge on the under body. Sometimes 22 gauge steel is used for under body panels, and believe it gives good results. The duster is of wood and the upright part laps over the front end of the body panel. The panels are pinned on the framing and the half oval aluminum moulding is also pinned or nailed on. The frame work around the door forming the pillars, can be of either bent or sawed stuff, the mouldings being worked on solid. If sawed stuff is used, show a bead where the pieces join. This will prevent the joints showing through the paint when they commence to work. The back seat and the upper panels are each in one piece, which makes a little more work, but the results are worth the trouble. These panels are joined under the middle moulding. Another moulding is put on around the glass light to fasten and finish that part of the panel. The roof is three ply, the under side being finished mahogany. The bows are ¾ by ¾ inches, and are also stained to match the roof. The auxiliary seats are of the revolving, folding-up type, and can be purchased outright, which is much better than attempting to make them. The glass frames are of mahogany, 1⅜ inches wide by ⅝ inches thick, and are put in from the outside, a rabbet ⅜ inches deep being worked all around the opening into which the frame is fastened with small plates and machine screws. This makes a perfect anti-rattling, dustproof and waterproof glass frame, the ledge or rabbet preventing the water leaking in back of the trimming.

The storm curtain is separated to allow access to the tonneau when down, and is fastened to the inner side of the skirt of the top rail. The glass front to be used above the dash is of the newer pattern, being divided 11 inches down from the bow. This top part is made to move both outward and inward, whereas the lower part is always stationary. This style is known as the visor front. The top is supported from the front seat by iron standards that are secured to same by the regular socket. We do not show in this draft a stationary glass above the back of the front seat, as it is not so much in vogue now as formerly. In case of its being required, however, the construction is as follows: A simple frame work extends between the iron posts, fastening to the wood rail of the seat and to a bow in the top. A movable glass is put in the center. The handle and the bracket at the top are put on for effect in rounding out the design.

General summary: The gasoline tank is nearly always put under the front seat and provision for space has been allowed. Also, in the tonneau the body has been made wider as it approaches the door from the back, which allows for ample foot room for three people on the back seat. The rear seat side is cut into to allow clearance for the wheel. This does not interfere with the cushion, as the cut out is formed by riveting a piece of bent aluminum to the side panel and the cushion is made to fit over this on the bottom.

The trimming is of leather and extends at the back to the under side of the top rail. Sometimes pockets are put in the corners of the back, but we do not advise this, as space that is more accessible for pockets is to be had on each side just ahead of the cushion, and if necessary, on the doors.

As this body is more of a summer or between season car, light colors in painting are most generally used; a light gray with white stripes and red leather or light gray with black stripes and black leather are combinations used.

THE NEW INDIANAPOLIS TRACK.

The automobile speeding track, as recently constructed, presents a course two and one-half miles, being 50 feet wide on the straight stretches and 60 feet wide on the curves. The home-stretch and back-stretch 3,301 feet long, the end straights being 660 feet long, and each of the banked turns being 1,320 feet long on the course line. The curves are each one-quarter of a circle of 840 feet radius on the course line, or 90 degrees of a 6-degree 49-foot 30-inch curve. No easement curves or spirals used.

The curves are banked to an angle of 16 degrees 40 inches in cross-section for 50 feet of their width, the remaining 10 feet of width being banked to an angle of 36 degrees 40 inches, all, as shown in Figs. 2 and 3. The approaches and releases to and from the banked curves are limited to a 2 per cent. grade in sections parallel with the measured course line, and the maximum variation from a level plane at the course line is a 2-10 per cent. grade. The straight stretches are given a pitch of 8-10 feet in 50 feet toward the infield for drainage, thus presenting a fine flat track for the cars.

COMPLIMENTS OF THE SEASON.

The Timken Roller Bearing Axle Company, who are such busy people in their Canton shops, have remembered us by sending a memorandum book, bound in what used to be called Shagreen leather, but nowadays is called by something special and appropriate. Anyway, it is a mighty pretty memorandum book, and, like the axles made by the Timkens, is just right.

Digitized by Google

THE AUTOMIBILE OF THE FUTURE.

An Article in Which the Probable Lines of Future Improvements Are Discussed.

Much has been written upon that interesting, if problematic, entity, the car of the future. Weird ideas, called ideals, have been advanced, but still we are left unenlightened as to the ultimate form a chassis may assume. Most of those who have attempted to forecast the future seem to have been oblivious of one very sound principle in mechanical matters. They forget apparently that a change is not necessarily a step forward. They would appear to be for adopting diverse means of identical ends, throwing over those we have tried and are using successfully. Many of the suggestions made are for alterations which would really mean little, if any, improvement.

There are actually two aspects to be regarded when considering the motor car of years to come, says D. W. Gawn, an English authority in The (London) Motor. These are the car itself and the industry producing it. Both have their destinies and each provides food for any amount of speculation. What the machine may be like concerns the motorist first, of course; but how, and by whom, it will eventually be put upon the market is a matter no less important to the hundreds engaged upon the designing, making, and selling of the motor vehicle.

From time to time, already, we have been asked to believe that the four-wheeled car will cease to exist, even as the four-wheeled railway engine largely has. Presumably, those who tell us this do not, and will not, see that there is no comparison between the two. Four wheels are, and probably always will be, enough for a self-contained road carriage. Possibly, all four may be driven to meet some special purposes, but there is ample adhesion in a single pair for average requirements, present or future, unless road surfaces become greatly changed and the resilient type goes out of use. If further adhesion is ever wanted, then extra driving wheels may be adopted, but until that demand is enforced, there is no shadow of justification for adding to the number now customary on every car.

The motor car fulfills the requirements of the moment, and, consequently, there is no ground for departing from it in any material degree. Only when it fails, or we tire of it, may it be elbowed out of place, to give room for a better successor. The most likely lines of development become evident when existing faults are understood and remedies sought for. This is but natural, and thus it is that, if one will, he may accurately foresee coming events by the quality of their shadows.

If we take the more obvious faults at the outset, it at once seems certain that the future car must have wheels of much larger diameter than those so far employed. It is the small wheel, heavily loaded and rapidly revolving, which whips up the dust and damages the roads. It is the small wheel which quickly wears itself out and makes tire bills excessive. And it is the small wheel which tends to set up vibration and, therefore, to bring about loss of power and dire inefficiency all round.

Because the wheels are small, the designer is compelled to introduce heavy and costly systems of suspension. Yet these faults are not generally recognized. With few exceptions, all are blind to the obvious—the disease as well as the palliative. Certain it is that the remedy for very many of the mechanical defects from which we suffer to-day is in increased wheel diameters. It may not be too much to suggest that the old way of having the driving wheels larger than the steerers may be revived because primarily correct. If the weight upon the axles differs, as it should, then the size of the wheels ought, also, to be different in proportion.

A fair distribution will allow nearly 70 per cent. of the total load to bear upon the back axle. Hence, clearly, the rear wheels must be similar or, if anything, should be less for the driving than for the steering wheels. By so providing, tires would wear appreciably longer than they do now, and they might well be of smaller section and easier resiliency. If this made for a diminution of tire troubles, that alone would render it worth while.

The question of wheel diameter resolves itself into whether it is better to impose very severe wear upon parts less adapted to sustain it, or to let it come upon such as can be made of the highest durability. Thus it may be the rubber tires or the steel gears which are given the heaviest duty. For, as goes without saying, if the road wheels are large and the stresses in the tires consequently reduced, there must be a correspondingly big gear ratio from the engine, and there will be a deal of extremely hard work put upon the transmission.

It is presumed that the motor itself will ever be of the high-speed type seeing how desirable, if not absolutely essential, is lightness coupled with high efficiency. Although, of course, no gearing can be as efficient as a true direct drive, it is doubtless preferable, on the whole, to gear down considerably in a proper manner than to have a slight reduction and drive small wheels fast. Unless, indeed, the engine wonderfully improves, it is hardly to be expected that the future car will be gearless, after all. Rather, one would anticipate further refinements in the gearbox, or its equivalents, so that it would be quite above reproach.

On the road, the running load must be continually varying, and it is manifestly unfair to any simple kind of internal-combustion engine to ask that it shall adapt itself with uniform nicety to all loads. It may do so within small limits, which doubtless will gradually extend up to a certain point, and this will facilitate the task of evolving an ideal change-speed gear. The very fundamentals of a petrol engine will need modifying, however, before the gearbox can be abolished.

There is a splendid field for the exercise of inventive talents in the carbureter. One does not like to be dogmatic, but it may be permissible to assert that the future car will not know the spray carbureter. This cannot lend itself well to extreme engine flexbility since its whole principle is against it doing so. It will surely pass away for precisely the same reason as did blacksmith Newcomen's steam engine.

Truly, it is astonishing, seeing the insistent demand that there is for flexibility of power, that an essentially restricted quantity such as atmospheric pressure should be pressed into service at all in the feeding of the motor. If one were to fancy the fantastic notion of filling his tires by ejection instead of by injection, it would be just about as sensible as the way in which we put the mixture into the cylinders. To attain the end every engineer has in view, the induction pipe must become a "conduction" pipe. The pressure therein must be produced positively and independently so that the cylinders may be filled against the opposition of residual gases. It is unreasonable to look for anything like true elasticity, which is but an effect of precise control, unless the ingress of the combustible vapor can be regulated nicely. As matters stand, the flow of gas cannot even begin until the piston has descended an appreciable distance through its stroke and so converted a residual pressure into a partial vacuum. As a consequence of this, and of the heat which reacts upon the charge and causes rarefaction, a cylinder will be only little more than half-filled at best. And this moiety will have to take care of itself so far as getting past the valve is concerned. It is very well to "time" an inlet valve accurately, but it by no means follows that the function of induction will hang immovably thereon. Several factors tend to oppose so desirable a property.

What is wanted is force behind the introduction of the new charges, and an absolute control withal. Then, whether the call be for a full measure of vapor or for less, the answer will be immediate and exast. The degree of fiexibility, both of power and of speed, induced by such a positive distribution need not be enlarged upon. It is self-evident.

As to the means whereby fuel can be fed under pressure to the engine, it would be interesting to see how far the fan might be used. At first sight, it seems a very curious idea to combine a "gas plant" with the radiator, but it is not entirely impractical. The current of air now induced over the cooling surface and wasted inside the bonnet could, possibly, be put to a useful pur-

Digitized by Google

pose in connection with the generation and supply of gasoline vapor. The carbureter would, probably, assume a close relationship to the apparatus employed for lighting. In fact, it might develop into a generator to serve not only the engine, but the lamps of a car, too. After production, the gas could be treated to render it of suitable quality for the respective ends in view when, perhaps, it could be stored under more or less low pressure to be fed pure and direct for consumption as suggested. Such heat as was taken over from the radiator would, to a certain extent, compensate for slight losses later due to some expansion in distribution. Not unlikely, such a system of carburation would conduce to great economy.

Horsepower—real or imaginary—has been raised until it has exceeded all reasonable bounds for average road work. Recently this has been recognized, and, hence, the tendency of the time is for moderate powers and moderate up-keep.

The popular car will be of lower power yet, and, altogether, practically a new era will be dawning. Then, for every large car there will be seen hundreds of small machines. Nor will these be tawdry and cheap toys, but serious little vehicles of the highest conceivable grade, and efficient to a degree never heretofore touched. In short, the breed will be refined and, in the end, motor cars will be run by many who dare not do so at present.

SORTING MAIL IN MOTOR WAGON.

The saving of time in the handling of mail by having it sorted and placed in respective bags for different trains and destinations has caused the postal authorities at Los Angeles, Cal., to construct an auto mail wagon sufficiently large to accommodate four mail clerks and the required sorting tables, pigeon holes and mail bags. This machine picks up the mail from boxes in all parts of the city between the hours of 11 in the morning and 8 in the evening, making rush trips at certain times to unload. While the machine travels its route the mail clerks within it are busily canceling stamps, sorting letters and tying them into bundles

Sorting Letters in Auto Mail Wagon

ready for delivery to the transcontinental and suburban trains. On the first day of the new service this moving post office handled 17,000 letters.

The car used, although experimental and not entirely suited to the purpose, being nothing more than a hastily improvised delivery truck, was successful enough to encourage the postal authorities to give serious consideration to the construction of special cars for the purpose. The plan saves an immense amount of labor at the main office and sub-stations, and also means a great saving of time in the dispatch of first-class mail matter.

The Brennan Motor and Manufacturing Co., of Syracuse, N. Y., has prepared plans for an addition to their engine and transmission plant.

From Wool to Automobile Bodies.—The old plant of the Pioneer Woolen Mills, Detroit, has been purchased by Knell & Adams, automobile body and top manufacturers.

HANDY TOOLS AND APPLIANCES.

Good Things to Have About the Shop, Where Auto Repairing Is Done.

By J. L. H. Mosier.

The builder or repairer of vehicles in small towns in setting out to do auto repairs ought to carry a small stock of many things that do not apply to the horse-drawn vehicle, because often there are no supply depots within many miles.

Two jacks are an absolute necessity to lift two or three tons, with a raise of from five to eight inches. Even a third one may often be found useful. While one tire pump may be sufficient, it is well to have another if you have to go up or down the road a mile or more to replace a tube, or tube and tire. There are so many it is hard to tell which is the best, if there is any "best"; an electric lamp with spare bulbs and one or more batteries to hook to, with cord attachment, enough to reach any part of the auto, and to spare; just here a word of caution: do not, at any time, go about an auto car with a flame light, no matter whether enclosed or not. The vapors, or escaping vapors, of an auto car using gasoline are penetrating and cause immediate explosion when coming in contact with flame, a spark or any red hot material, hence they are dangerous at all times when nearing an auto car which uses gasoline. If you do not have the electric fluid on tap your portable battery will give the supply necessary.

A good supply of rubber cement is absolutely necessary, and with it a small supply of benzine to keep it solvent or plastic and ready for use. Rubber tube patches are also wanted and OO sandpaper to clean off the rubber before applying the cement. A few ounces of muriatic acid and a few scraps of sheet zinc to reduce the same for use as a flux in soldering is a necessity, as is also a bar of "half-and-half" solder. A one-pound and a three-pound soldering iron and a chunk of salammoniac, say. two pounds or more, are always useful. A few pieces of the different grades of thickness in the thin, soft sheet brass, and a small sheet of No. 26 galvanized sheet iron, with which to repair the mud fenders, come in good, as does also a package of two-pound tinned tinsmith's rivets. "Solderine" for general purposes is a handy agent. "Alumnite" does the business when aluminum has to be patched.

A six-inch and a ten-inch Stilson wrench are indispensible. In monkey wrenches, one ten-inch, one twelve-inch and one fourteen-inch are necessary factors. One or more combination pliers are always useful. Hand vises—two—are among the valuables. You also need one, two, or more chains with which to put in a new one or to repair an old one. In this matter consult your supply dealer for definite information. Have on hand graphite, also a few cans of grease. Rubber tubing in various sizes is ever handy. Consult with your supply dealer on this matter. In the matter of rubber goods, you will want a supply of talcum powder. Brake hand lining is another requisite; it comes in widths from one inch up to four inches. The standard thickness is about one-quarter-inch. The narrow and very wide are not often called for—two to three inches are the average standard widths. In the matter of brakes, the copper rivet comes in for attention.

A drip pan made of galvanized sheet iron, No. 20 iron, about thirty-four inches wide and twenty-eight inches long, from one and one-half to two inches in depth, to place under the active part of the car to catch the drip from transmission case and all the other parts is an excellent thing to keep the floor clean, and cuts down insurance hazard, if your repair floor is not of concrete. The wood floor becomes soaked with gasoline and oils, and in a few months becomes a veritable mine ready to go up at the approach of the first cause, a spark, a lighted match, etc.

Many of the parts are of such intricate construction that the working parts may not be reached by the ordinary squirt can, in which case a syringe oiler is used. They are called oil guns. They are varied in shape.

Digitized by Google

THE "TORPEDO" BODY.

A development of body building by those makers who strain after a sensation rather than a worthy effect, is much in evidence now, with various names, but as Torpedo is one of them, it will answer as a classification.

The honor of producing this smart style is disputed between two foreign car makers, but it is so highly probable that the article itself will be discarded before the "honors are easy," that we need not be particular in ascribing the credit to any one.

At the show in London, many of these bodies were hung on cars, the striking feature being the adoption of high side doors for the front seats, and the prevalence of the flush side. These side doors make an alleged improvement, both in comfort and in appearance. To afford a maximum of comfort, the doors must be as high as the arm rests of the front seats, and the result is that with a very short body or a carelessly designed two-seater, the effect may not be pleasant to the ye. With this exception, however, the front doors may be taken to be an improvement.

The flush-sided body is popular, and it is interesting to note, as showing the quick development of the type, that no example can be traced previously to the summer of 1908.

There are many varieties to be seen—some of which bear but little resemblance to the original type. To be most effective the body must be joined on to the bonnet by a sloping line, so that the top of the car may present an unbroken outline from the radiator to the hood at the rear. Hence, it will be recognized that this body is seen to best effect when the front of the car is on Renault lines, or, if otherwise, when the bonnet and radiator are higher than the average.

A special feature claimed for the flush-sided body is that it can be made specially light, for the framework can consist of a braced wooden skeleton with sheet metal panelling.

INTEREST IN THE APPRENTICE.

On all sides one hears the complaint of "incompetent workmen," and the cause thereof has always been, just as it is now, a disputed question. Of course, we all know that the printing trade, like every other, always contains a certain amount of incompetents—men wholly unfitted for the occupation in life they have assumed. On the other hand, it is an undeniable fact that there is an alarming number of journeymen seeking work at this time who claim the protection and the rights of members of the printing trade unions, with their flat scales demanded by competent and incompetent alike. The cause of this condition of affairs becomes, to use the vernacular, an occasion of "crim" and "recrim" whenever the representatives of the employers and the employees' organizations get together. We are going to "sidestep" any decision in this important matter at this time, while we call attention to a notable example of a continuous effort to meet this problem in an enlightened spirit and one which more than abundantly met the expectations of the conscientious and high-minded man who devised the plan.

In recording the death of Robert Hoe in London recently the press of the country paid his memory many and varied tributes, but none finer than the one that told the story of his conscientious concern for the youth who were being prepared for their future battle with the world by a thorough mechanical training in the Hoe establishment in Grand street, New York City:

"He spared no trouble in building up a competent set of mechanics, and in this connection gave much attention to his apprentices' school. Every boy apprenticed to him was compelled to attend school. One hour of his working time and one hour of his own time were devoted to this purpose, and in order to prevent any difficulty from the supper hour they were provided each night with a luncheon of milk and sandwiches. In this school part of the time was devoted to the continuation of the regular education along lines of the public school, and the rest was set apart for technical studies. They were thoroughly trained as skilled mechanics and draftsmen, and some of the leading men in the Hoe works and in the pressrooms of the large newspaper offices of the city received their start in life as apprentices to R. Hoe & Co."

The individual effort to solve the apprenticeship problem is one that most modern employers try to dodge, especially in large cities, but the successors of Mr. Hoe, instead of looking upon this part of their heritage as a burden, will doubtless see that this branch of its founder's work shall receive fresh impetus as a most fitting testimonial to his memory.

AUTOMOBILE WHEELS, ALSO.

The Sarven Wheel Company, of Indianapolis. Ind., whose wheel output is among the largest and best, has up to the present confined its energies to the usual line adapted to horse-drawn vehicles.

The pressure of requests for automobile wheels has been very persistent, and finally the company has yielded to the demand by installing a plant expressly for motor car works. The trade now will have a new and sustained source of wheel supply for motors, pleasure or business, that will match up with the product already in such high repute for the ordinary vehicle.

THIRTY YEARS YOUNG.

The thirtieth year of the successful career of the Blacksmith and Wheelwright has been signalized with an anniversary number. Some of the subscribers who have been on the list for most of the life of the paper, are pictured. The other features that are constant have been elaborated interestingly. One of these "features" is the advertising space, which has been certainly "elaborated interestingly" for this occasion, we hope to the profit of the client, and we are sure to the gratification of the publisher. This issue is a pronounced success.

Wants

SITUATIONS WANTED.

Wanted—Position as foreman painter by young man desiring to make a change. Eight years' experience. Would prefer automobile or high grade carriage work. Address "R," care The Hub, 24 Murray Street, New York. N. Y.

Wanted—Position by experienced foreman blacksmith. Carriage or automobiles. Desires a permanent position with good manufacturer. References A. 1. Address Box 22, care The Hub, 24 Murray Street. New York, N. Y.

HELP WANTED.

Wanted—Foreman for carriage wood work department. Also a first class bench hand for carriage body department, capable of working from drawings. Address "C. D.," care The Hub, 24 Murray Street, New York, N. Y.

Wanted—A wood shop foreman for Canadian factory with output of 10,000 wheeled vehicles and 5,000 sleighs. None but experienced men need apply. Highest wages. Address "C. D.," care The Hub, 24 Murray Street, New York, N. Y.

FOR SALE.

For Sale—Imported Rothschild limousine body. Built for royalty. Seats seven passengers. Color dark blue. Copper gasoline tank. Fits Packard chassis. Genuine leather upholstery. Cost $4,000. Looks like and is equal to new. First check for $300 takes it. Automobile Repair Co., 811 North Broad Street, Philadelphia. Pa.

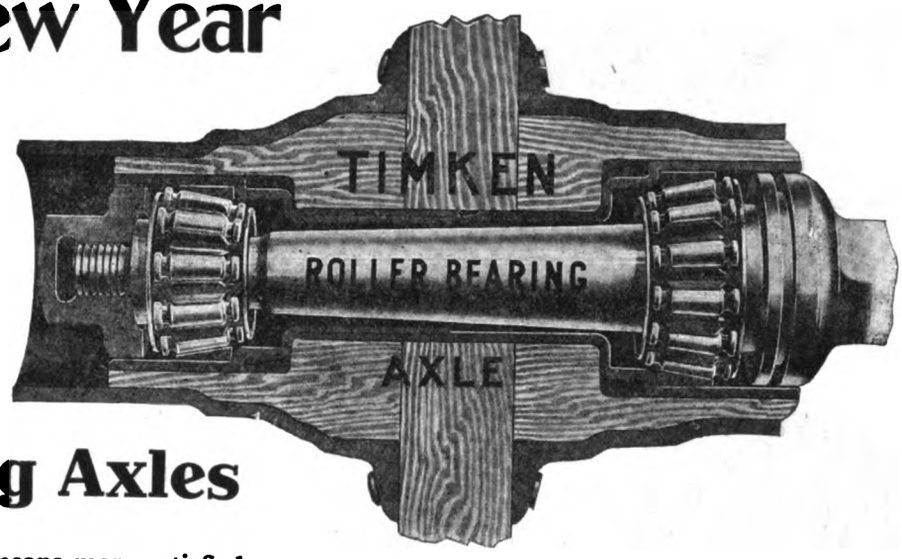
PATENTS.

Patents—T. W. T. Jenner. patent attorney and mechanical expert, 608 F St., Washington, D. C. Established 1883. I make an investigation and report if a patent can be secured and the exact cost. Send for full information. Trade-marks registered.

Digitized by Google

Start the New Year Aright

and turn over a new leaf by equipping all the vehicles you manufacture with



TIMKEN
Roller Bearing Axles

It means bigger profits to you. It means more satisfied customers for you and bigger profits to your customers and satisfied customers are generally profitable customers.

Timken Roller Bearing Axles Are Guaranteed for Two Years.

THE TIMKEN ROLLER BEARING CO.

Branches
10 E. 31st Street, New York
429 Wabash Avenue, Chicago, Ill

Canton, Ohio.

Cover a carriage top with MERITAS enameled oil cloth—cover another with any other kind—follow them up and see how long the tops last.

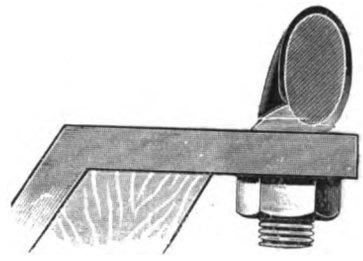
MERITAS will be in good condition long after the other has been caked, cracked and weather-killed.

Try it—then stick to the kind that lasts the longest.

Look on the back of the goods for our trademark.

See Your Jobber.

Standard Oil Cloth Co.
320 Broadway, New York

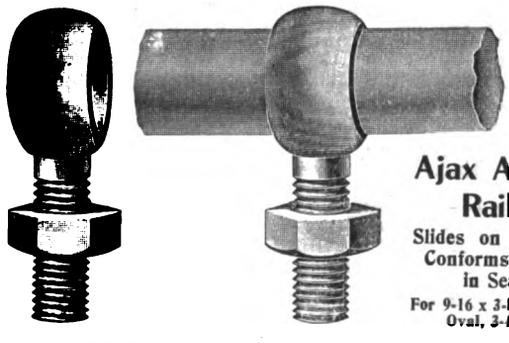


ALLEN'S ADJUSTABLE RAIL NIB

PATENTED

Readily Adjusted Absolutely Secure

For 9-16 x 3-8 Oval, 5-8 x 3-8 Oval, 3-4 x 3-8 Oval



Ajax Adjustable Rail Nibs

Slides on the Oval and Conforms to variation in Seat Irons.

For 9-16 x 3-8 Oval, 5-8 x 3-8 Oval, 3-4 x 3-8 Oval.

CORTLAND FORGING COMPANY
CORTLAND, N. Y.

Please mention "The Hub" when you write.

Digitized by Google

A New
Tire
Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

H. K. PORTER
EVERETT, MASS., U.S.A.
BOLT CLIPPERS

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

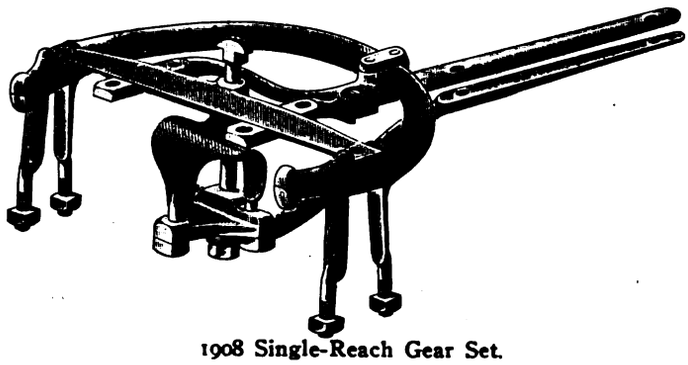
Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.
745 THIRD AVE., BROOKLYN, N. Y.

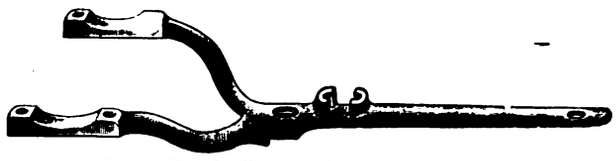
INDEX TO ADVERTISEMENTS.

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.



Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

Our Carriage or Spring Edge Cushion Frame

Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

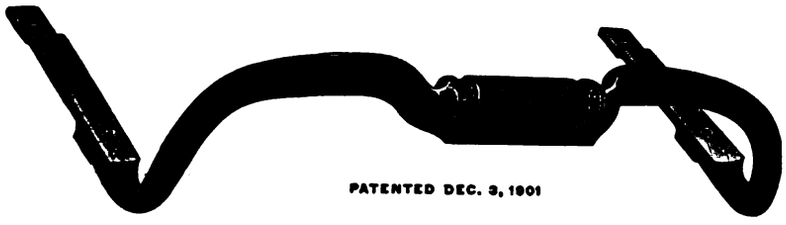
NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



PATENTED DEC. 3, 1901

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland, Pa

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

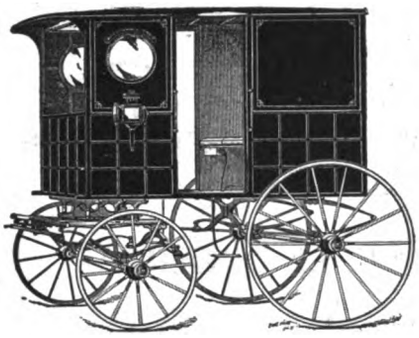
THE BEST THAT CAN BE MADE

SPRING PERCH CO.

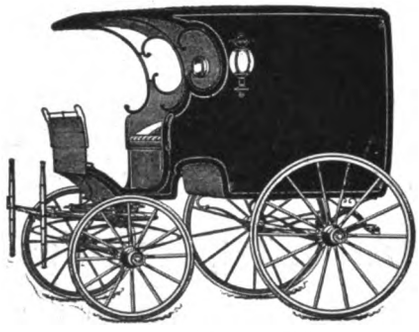
BRIDGEPORT, CONN.

Please mention "The Hub" when you write.

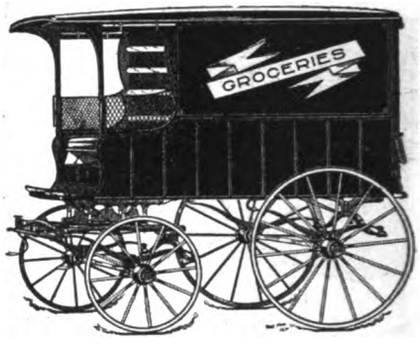
Digitized by Google



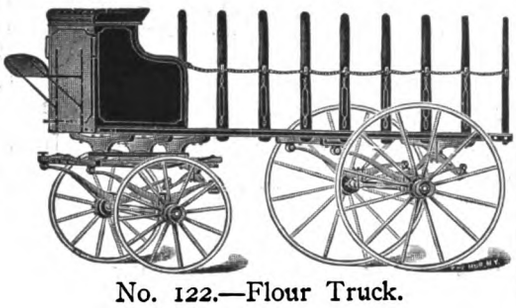
No. 112.—Milk Wagon.



No. 111.—Altman Wagon.



No. 113.—Grocery Wagon.



No. 122.—Flour Truck.

Electrotypes

of the vehicles presented on this page will be forwarded on receipt of

75 cts.

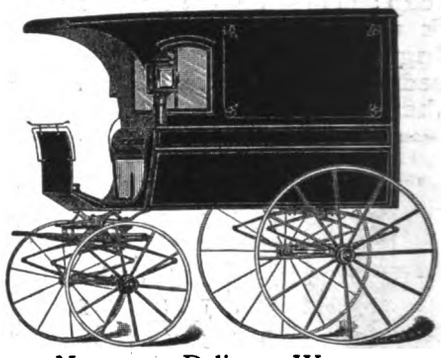
for each cut, to any address. Postage prepaid.

Catalogue

containing nearly 200 illustrations of carriages, wagons, sleighs, and miscellaneous cuts will be sent upon application.

Trade News Publishing Co.

24-26 MURRAY ST.
NEW YORK

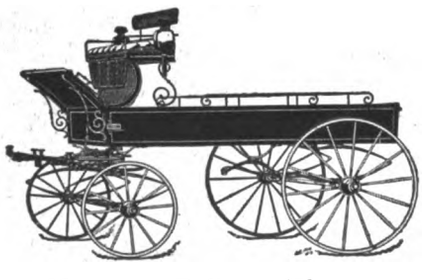


No. 115.—Delivery Wagon.

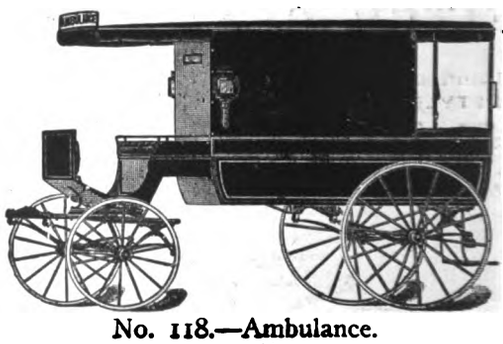
No. 116.—Milk Wagon.

No. 117.—Merchandise Truck.

No. 114.—Delivery Wagon.

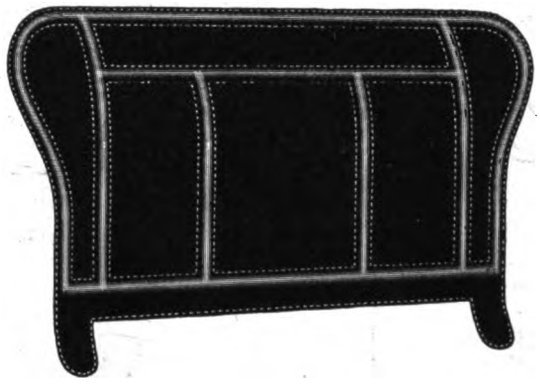


No. 124.—Delivery Wagon.



No. 118.—Ambulance.

Digitized by Google



HIGH GRADE

Dashes and Fenders

THE INDIANAPOLIS DASH CO.

INDIANAPOLIS INDIANA

WHY NOT USE THE MEYER THREADS

AND SPOOL SILKS FOR

CARRIAGE and AUTOMOBILE WORK

Every spool warranted. Buy direct from the manufacturer. Samples gratis. All sizes and colors.

JOHN C. MEYER & CO.

MILLS AT LOWELL, MASS.
Offices: 621 Broadway, New York, N. Y.
77 Summer St., Boston, Mass.
Address all correspondence to our mills, Lowell, Mass.

Carriage Mechanics

Desiring to improve their present Condition should attend the

TECHNICAL SCHOOL

FOR

Carriage Draftsmen and Mechanics

SUPPORTED BY THE

Carriage Builders' National Ass'n.

The object of the School is to teach men to design vehicles and make working drawings, and to otherwise facilitate their work in the shop. Only those men employed in carriage or automobile building or their accessory trades are admitted to its privileges.

The classes are conducted in three divisions, viz.: Corresponding, Day, and Evening. The former is open during the entire year, while the day and evening classes are in session only from October 1st to April 1st.

The tuition is moderate.

For prospectus and full particulars, write to the instructor,

ANDREW F. JOHNSON,
18 West Forty-fourth St.,
NEW YORK CITY.

JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

The George R. Carter Co.

Manufacturers of

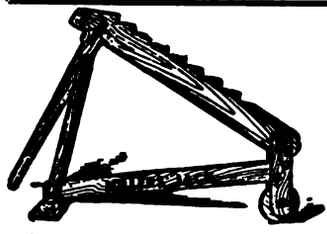
AUTO STRAPS A ESPCIALTY

CRANK STRAPS, HOOD STRAPS, TOP STRAPS AND TOOL BOX STRAPS.

JOBBERS IN

TRIMMING LEATHER, TOP LEATHER, LEATHER CUT TO PATTERN FOR CUSHIONS OR TOPS,
SHAFT LEATHERS, SHAFT STRAPS, POLE STRAPS, ETC.

CONNERSVILLE, INDIANA.



Made in four sizes, Nos. ½, 1, 2, and 3.

JACKS FOR BUGGIES AND WAGONS

Miller Patent Wagon Jack
Made by

J. V. HANKINSON,

Successor to THOS. MILLER,
FRANKLIN, OHIO.
Write for particulars and prices.

Richard Eccles Co., Auburn N. Y.

Manufacturers of

Forgings: Carriage, Wagon, Automobile, Special

Send for Catalogue.

Digitized by Google

PLATE 5.
Low Wheel Runabout.

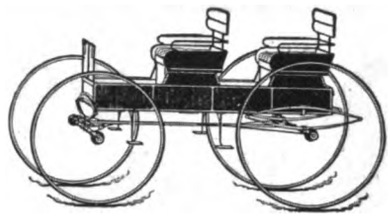


PLATE 10.
4 Pass. Beverly Wagon.

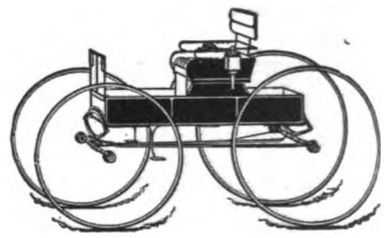


PLATE 15.
2 Pass. Beverly Wagon.

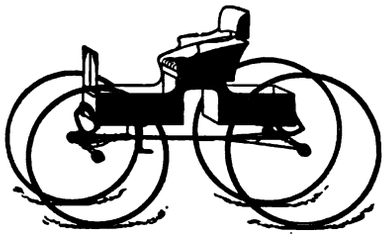


PLATE 20.
Cut-under Buggy.

MAKE YOUR

ADVERTISEMENT

ATTRACTIVE

By using these Advertising Cuts at 75 cts. each.

The plates shown on this page are especially made for newspaper advertising, but, because of their clearness, are as well suited for the best printed magazines and stationery.
They are

Unique in Style
Correct in Detail
Attractive in Appearance

and represent the most popular carriages of to-day.

A special plate, the size and character of those on this page, of your own design and for your exclusive use, will be furnished for $3.00.

One or more sent at 75 cts. each, by mail (postage prepaid) on receipt of check or money order.

TRADE NEWS PUBLISHING CO.,
24-26 MURRAY ST.,
NEW YORK.

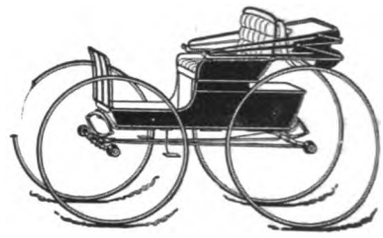


PLATE 25.
Corning Buggy.

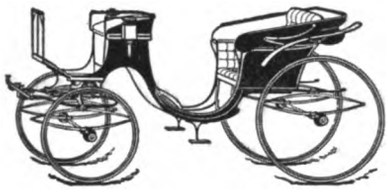


PLATE 30.
Panel-boot Victoria.

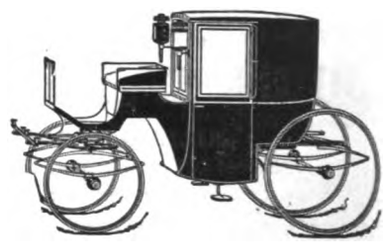


PLATE 35.
Brougham.

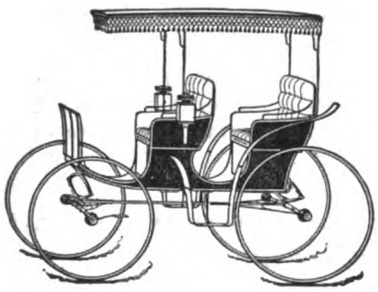


PLATE 40.
Canopy-top Surrey.

PLATE 45.
Elliptic Spring Buggy.

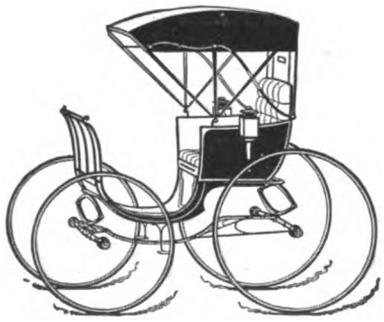


PLATE 50.
Ladies' Phaeton.

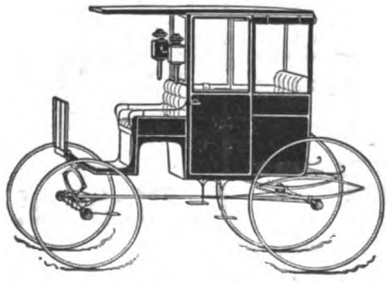


PLATE 55.
Station Wagon.

PLATE 60.
Doctor's Phaeton.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

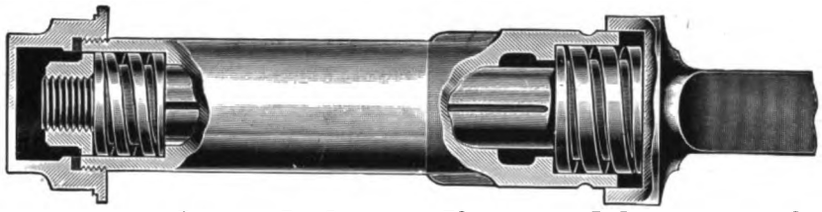
Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES } **C. T. RAYNOLDS & CO'S** { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES }

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

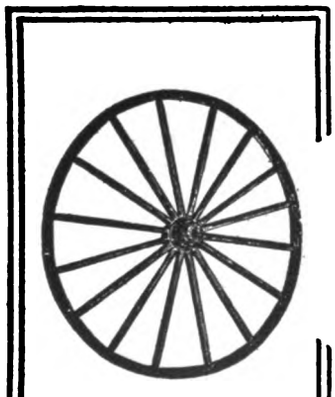
DALZELL AXLE CO., South Egremont, Mass.

BOLTS

Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.



Time Has Told the Story!

Service and satisfaction always follow our rolling stock

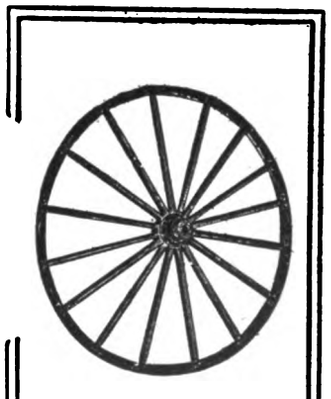
WHEELS

ALL KINDS—BEST QUALITY

Also RIMS and SPOKES

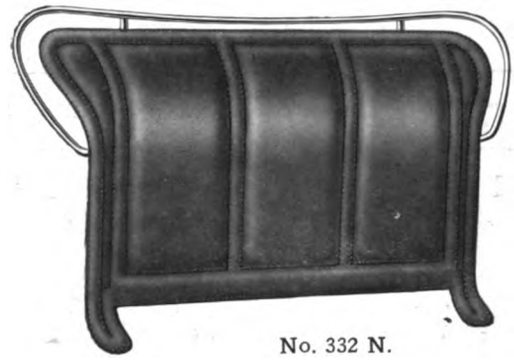
The Eberly & Orris Mfg. Co.

MECHANICSBURG, PA.



Digitized by Google

WING DASHES

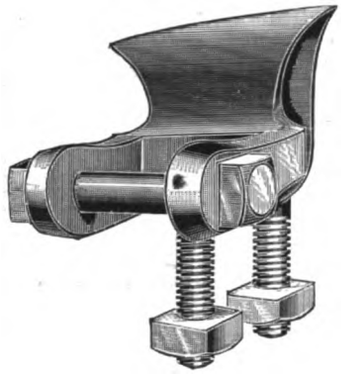


No. 332 N.

BUFFALO, N. Y.

TROY, OHIO.
CINCINNATI, OHIO.
ST. CATRARINES, ONTARIO.

McKINNON DASH COMPANY.



Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips ⅝ or ¾ width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

Catalogue "H" and Prices on Application.

COLUMBUS BOLT WORKS, Columbus, O.

HIGH-GRADE VEHICLE

WHEELS

SARVEN, WARNER COMPRESSED BAND WOOD HUB

All materials are carefully selected and thoroughly seasoned. Prompt Shipments. Send for Catalogue and Price List.

UNION CITY WHEEL COMPANY,

Union City, Indiana

Digitized by Google

The Hub

Vol. LI. FEBRUARY, 1910. No. 11.

AUTOMOBILES

CARRIAGES

MOTOR TRUCKS

WAGONS

TRADE NEWS PUBLISHING COMPANY
24-26 Murray St., New York, N. Y.

Digitized by Google

Hoopes Bro. & Darlington Inc.

West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS

RIGHT VARNISH MAKES

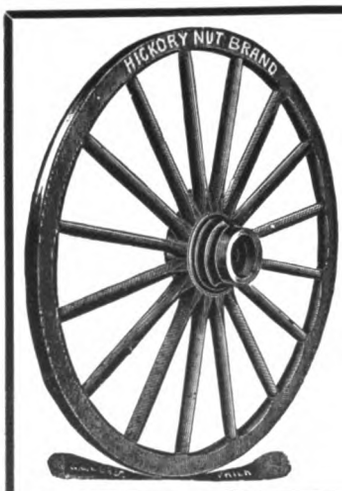
Satisfactory Vehicles

CARRIAGES. buggies and other vehicles that satisfy must not only be well made, they must also be **well varnished.** Your reputation and your profits depend upon the varnish you use. You can make no mistake by using STANDARD VARNISH WORKS' VARNISHES, they are the standard of excellence because they represent a **Unity of Color, Lustre, Working, Drying and Wearing Properties.** Of those not using these varnishes we ask for an opportunity to prove the validity of our claims.

STANDARD VARNISH WORKS

CHICAGO NEW YORK LONDON BERLIN BRUSSELS

INTERNATIONAL VARNISH COMPANY, Ltd., TORONTO, CANADA



CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

ESTABLISHED IN 1791

Wm. Harland & Son

Beg to announce that they have removed their United States Headquarters to Genesee Street and Erie Canal, Buffalo, N. Y.

Wm. Harland & Son

IMPORTERS OF

Harland's English Varnishes

FOR

Coach and Automobile Builders, Railway and Street Car Finishing

AND MANUFACTURERS OF

High Grade Varnishes for all Purposes

FACTORIES:

MERTON, LONDON, S. W., ENGLAND.

GENESEE STREET and ERIE CANAL, BUFFALO, N. Y.

400 EASTERN AVENUE, TORONTO, ONTARIO.

Western Branch, 40 Dearborn Street, Chicago. C. H. Schooley, Manager.

General Manager United States and Canada, H. Hagger.

Please mention "The Hub" when you write.

Digitized by Google

JOHN W. MASURY & SON.

Originators of

Superfine Coach and Automobile Colors

Acknowledged the Standard for Fifty Years

AND MANUFACTURERS OF

Fine Carriage and Automobile Varnishes

New York, Chicago, Minneapolis, Kansas City

WILLEY'S

COLORS

The RECOGNIZED STANDARD

C. A. WILLEY CO.

COLORS GRINDERS

and Manufacturers of Specialties in

CARRIAGE, AUTOMOBILE AND CAR

PAINTS

COLORS, VARNISHES, ETC.

HUNTER'S POINT, NEW YORK CITY

THE STANDARD

Auto Door Locks

FOR NINETEEN TEN

No. 999 Security Hook Lock for Touring Cars.

No. 25 Security Hook Lock with complete lever control for Touring Cars.

No. 39 Rotary Lever Lock for Limousines and other closed vehicles.

Test them out NOW for the coming season. : : : : :

English & Mersick Co.

New Haven, Conn.

Digitized by Google

1910 IMPROVEMENTS IN SWINEHART TIRES

MEAN MORE MILEAGE, LESS EXPENSE, NO DELAYS, DOLLARS SAVED

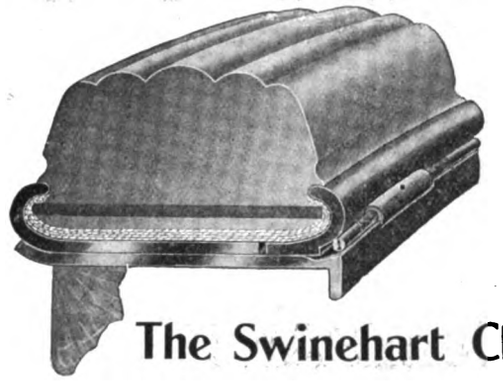
CONSIDER! Mr. Manufacturer, the advantages of our line before leaping into the uncertainty of 1910 season with an old-fashioned, inefficient, unimproved, inconvenient tire equipment.

CONSIDER! Mr. Manufacturer, that truck owners in general are no longer buying tires because they are cheap.

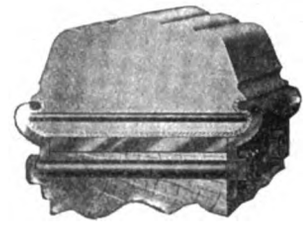
CONSIDER! Mr. Manufacturer, that more Swinehart tires are used in New York and Chicago (the great commercial car fields) than any other make, because they give from 20 per cent to 50 per cent more service, and are more convenient to apply.

CONSIDER! Mr. Manufacturer, every time your customers are forced to lay up their cars for repairs to tires or renewals, it costs them from $10 to $50 per day, and consider that Swinehart quick detachable rims eliminate all such delays.

SAVE YOUR CUSTOMERS MONEY AND IMPROVE THE REPUTATION OF YOUR CAR BY USING SWINEHART TIRES



FLANGE RIM FOR WOOD WHEELS



The success of our quick detachable rims during past seasons has demonstrated that truck owners appreciate this feature.

Our clincher tires with improved quick detachable flange rims make it possible for an amateur to change tires in thirty minutes. The nuts on one side are simply taken off, one flange removed, old tire slipped off, new one put on and flange replaced. No tools other than wrench and a few bars required.

QUICK DETACHABLE RIM FOR STEEL WHEELS

The rim shown at left has revolutionized the truck tire business and demoralized competitors. It has placed the truck tire manufacture on the same high plane of perfection as tires for pleasure cars. This rim is furnished for all steel wheels.

Not only have our tires and rims been improved constantly, but facilities improved and capacity enlarged in order to meet the constantly increasing demand for our product.

MOTOR BUGGY SPECIAL

Expressly designed for motor-driven cars—not a tire for horse-drawn vehicles. Wide tread gives increased traction. Large size, beaded tread and concave sides add resiliency and durability. Made endless, no joints, easily applied by anyone.

The Swinehart Clincher Tire and Rubber Company.

Akron, Ohio

NEW YORK, 875 7TH AVENUE
DETROIT, 850 Woodward Avenue
ST. LOUIS, 2109 N. 9th
CHICAGO, 1720 MICHIGAN AVENUE
SAN FRANCISCO, 503 Van Ness Avenue
INDIANAPOLIS, IND., 809 Mass. Avenue

DURABLE **RELIABLE**

Mander's English Varnishes

MANDER BRO'S, Wolverhampton, Eng.

Works Established 1803

A. E. LOUDERBACK

Agent

118 Hudson St. New York.

CARPENTER-MORTON COMPANY

Sole Agents for New England

BOSTON MASSAHUSETTS

BRILLIANT **ECONOMICAL**

Digitized by Google

THREE SUPERLATIVES

Valentine Varnishes Lawson Varnishes Valentine Coach Colors

Whatever the grade of work these are the reliance of the painter that all requirements will be met

TRADE VALENTINES VARNISH MARK

VALENTINE & COMPANY

New York Chicago Boston Toronto Paris Amsterdam

83 Years' Experience in Every Can

E.S. 1827 & CO. **Edward Smith & Co.**

CARRIAGE VARNISHES

Everything from the
Bare Wood to the Finishing Coat.

CHICAGO NEW YORK

HOTEL EARLINGTON

55 WEST 27TH STREET
Near Broadway, NEW YORK

This well known, absolutely fireproof hotel, after being entirely renovated, redccorated and fitted up complete with new plumbing has now reopened.

Rates from $1.00 and Up
With Bath, $5.00 and Up

Special rates by the season or year for permanent guests. A special feature will be the cuisine, both in the dining room and in the new cafe for ladies and gentlemen. A la Carte and Table d'Hote.

Hotel under the management of

GUERNSEY E. WEBB
Formerly of the Ansonia.

RUB ——— RUB ——— RUB

THAT'S THE EXPERIENCE SOME PAINTERS HAVE WITH A POOR RUBBING VARNISH. THEY RUB TILL THEIR HEART ACHES ONLY TO HAVE THE VARNISH SWEAT, OR ROLL UP UNDER THE PAD.

XX Diamond Rubbing and Hard and Quick Drying Rubbing "A"

DRY HARD TO RUB IN TWO DAYS, WITHOUT SWEATING, ARE TOUGH AND THE BEST FOUNDATION FOR FINISHING COATS.

MADE BY **MOLLER & SCHUMANN CO.**

MARCY AND FLUSHING AVES., **BROOKLYN, N. Y.**

Digitized by Google

Goodrich
Solid Rubber Tires

Internal Wire Carriage Tires

Side-Wire Tires for Heavy Carriages

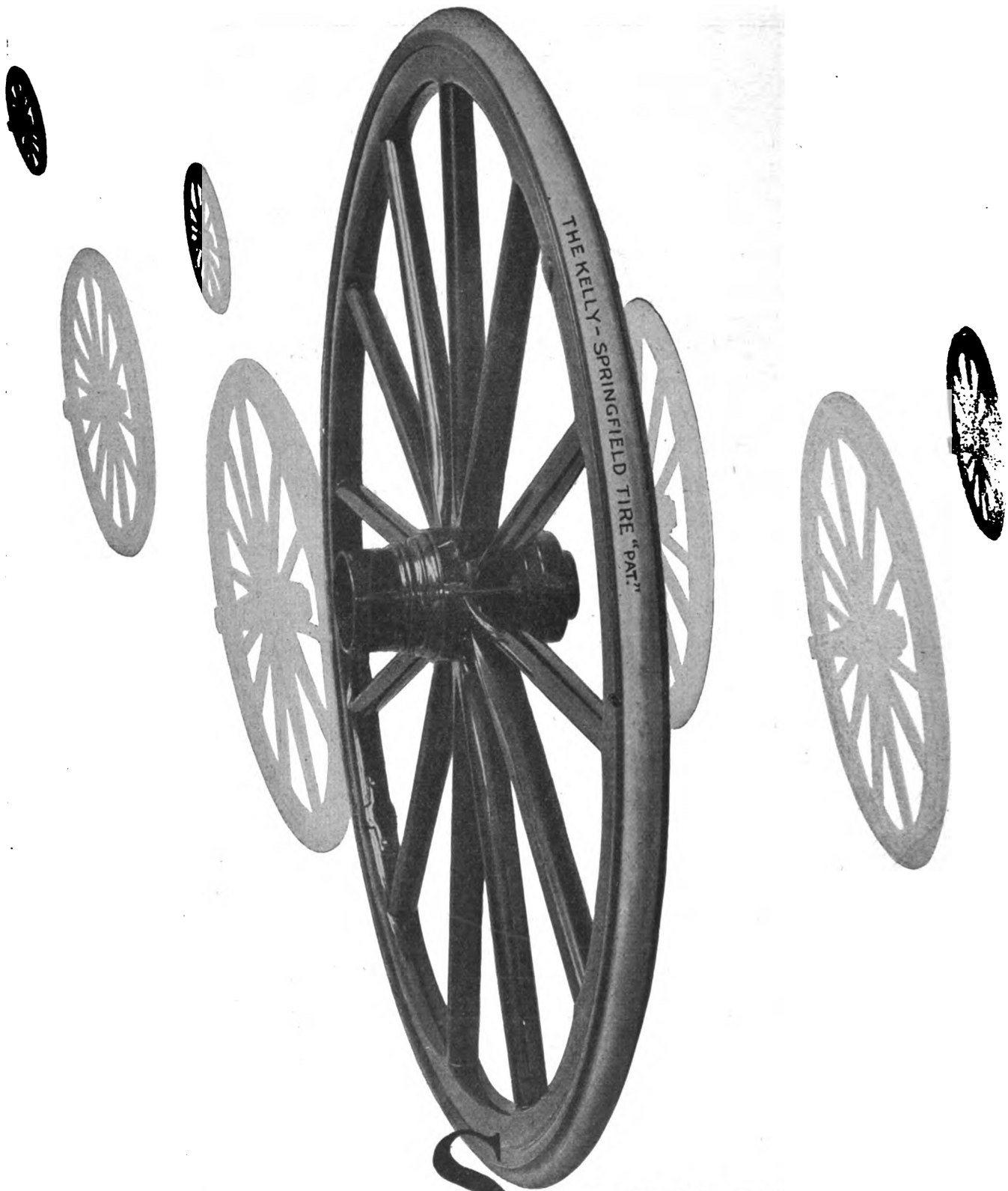
These products represent fifteen years of consistent development, and co-operation with customers. They have been distinguished always by the

Mark of Quality

¶ Copies of the 1910 Catalogue will be gladly sent on request.

The B. F. Goodrich Company
Akron, Ohio

Digitized by Google



SOMEBODY said that you never know how good a thing is until you see the imitation. WE say you never know how bad its imitations are until you see the

Kelly-Springfield Tire

Digitized by Google

The Hub

Copyright, 1910, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. LI. FEBRUARY, 1910. No. 11.

THE TRADE NEWS PUBLISHING CO. OF N. Y.

Publishers of THE HUB

J. H. WRIGHT, *President.* G. A. TANNER, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

JACOB H. KLEIN, *Technical Editor.*

REPRESENTATIVES:

J. G. TANNER C. E. HASBROOK JULIUS P. PREYER

Other Publications of Trade News Publishing Co.:

HARNESS (monthly) .....per year, $1.00

AMERICAN HARNESS AND SADDLERY DIRECTORY (annual) .....per copy, $4.00

THE HUB is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of TRADE NEWS PUBLISHING CO.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

FRANCE.—L. Dupont, publisher of *Le Guide due Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

GERMANY.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

ENGLAND.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

The Way of It.

A large number of business men, especially country dealers, are learning cost accounting as a science; things they did not know before or did not know properly, or did not use properly. The new school is teaching them how to sell goods at a fair profit and how to find out the actual cost of what they sell. This is not such an easy matter as it looks. It would seem to be common sense for a dealer to absolutely know what his goods cost, but we are asked to believe that in some lines when failures have been extremely numerous, the failures were largely due to selling merchandise too close to its actual cost or below it, to enable the business men to hold their own.

Nothing but good can come from this campaign of education. It is a most necessary campaign in which accessory manufacturers as well as dealers can find advantage. Most of the unwise competition of the past has been due to the ignoring of the real cost of products sold. If the greater manufacturing industries succeed better than the smaller ones, it is due to this close study of cost of production. If the greater dealers have succeeded better than the smaller it is, perhaps, because they have found out the actual cost to them of what they sold and then adhered to the prices such cost warranted.

Modification on the Wage Basis.

Somehow or other, sooner or later, the principle of quasi-partnership of employes with employers will be brought about, not as a strict and straight partnership, but in some modified form in which employes' compensation will depend to some extent upon the prosperity of the business.

We see evidence of the growth of this tendency all around, in specks and patches as it were. The reason for so saying is because certain underlying influences working to that end are active.

Sliding scales of wages which for years have prevailed in some industries, were the first step in that direction. This has been followed by actual participation in profits in a few industries. A corelating influence has been at work and has established pension and death benefits, notably by some railroad corporations. A few manufacturing concerns have been selling stock to their employes.

As industries become well settled, when demand becomes reliable, when ups and downs are eliminated largely, is the time when employers and corporations can see a long way ahead and feel safe in more or less certin average returns, it is then that the opportunity for profit sharing rests on a substanial basis. The indusries having the greater aggregations of capital will lead. How far down the scale into the other industries profit sharing will go is uncertain, but the drift is in that direction.

Rubber.

To all appearances we may expect furthe radvances in rubber. Imports this year (last two months averaged) were $75,000,000 in value as against $46,000,000 in value for 1908. In weight, the importations for ten months ending October 31 were 73,000,000 pounds. In twenty years the price has advanced from 40 to 80 cents a pound, but for the past two years the import price was $1 a pound.

Brazil sent 34,000,000 pounds in the first ten months of this year, valued at $30,000,000. Africa and East India 9,000,000 pounds, valued at $10,000,000; Mexico, 15,000,000 pounds, valued at $5,500,000. The East Indies and Central America contributed about 1,000,000 pounds each.

The Coming Industry.

Almost overnight, as it were, the flying machine industry has come into existence. It is estimated there are about one thousand flying machines in the world already, and of these, about two hundred are in the United States.

A flying machine factory with a large capital will soon be in operation and others are projected. Promoters feel satisfied that sufficient progress has been made to warrant the investment of money in factories and in the efforts to build up a business.

As yet the field for flying machines has not been clearly defined. Probably, as with the automobile, they will be

Digitized by Google

purely pleasure crafts for sailing the air, though more practical purposes are spoken of. That this coming industry will afford employment for considerable capital can not be gainsaid. If people are convinced they can ride through the air 30 or 60 or more miles an hour, there will be enough of them to want to go that way to start a good many factories.

Towards Steel.

Whether or not a limit has been practically reached in the employment of iron and steel is open to doubt. Steel wheels for certain lines of construction are satisfactorily used, but for many purposes steel parts are not adopted, not that they are not practical and serviceable, but because the advantage in cost over timber is not worth while.

Wood working machinery has become so highly developed that the wood parts can be finished at a cost that leaves out metal; besides repairs and replacement are more easily done, and more workmen understand how to handle wood than iron.

And yet we hear of radical suggestions once in a while with regard to the further use of iron and steel parts in carriage and wagon construction. Steel freight cars and steel passenger cars a few years ago were laughed at as chimerical, but here they are, driving out wooden car structures.

Hides Abroad.

Hides which could be purchased in England a dozen years ago at the equivalent of six cents a pound now sell at 13 cents. A high manufacturing authority says "tanners are having to give high prices for hides because the demand is so much greater than the quantity available. The consequence is that when the finished leather reaches the manufacturer it is much more costly. The supply of hides in London has been greatly decreased of late owing to the policy adopted by American cattle sellers. In many instances it is now stipulated that the hides of the United States cattle killed at Deptford shall be sent back to America. Hand bags, leather belts, and the thousand and one articles made of the material which the public buys will have to be advanced 5 to 10 per cent. in cost shortly."

The total exports from Beunos Ayres, Argentina, to the United States for the quarter ending June 30 aggregated $4,857,655, according to consular records. Wet hides comprised $1,444,35; dry hides, $1,060,518; goatskins, $279,332; pelts, $133,788; bones, $54,277; calfskins, $50,159; sheepskins, $17,158; sheep casings, $21,695; quebracho extract, $549,000; quebracho wood, $44,582; linseed, $254,634; oats, $168,116; corn, $1,583, and wool, $613,884.

Will They Try It on Timber.

It is the vitality inherent in wood that makes it so difficult to displace it with substitutes. We have substitutes by the dozen, especially in building construction. Substitutes for stone, brick, iron and steel plates. We have substitutes for pulp in paper making, and refuse products are being tortured by chemistry and mechanism to produce paper. This is an age for substitution, but when it comes to the use to which timber is put, an obstacle presents itself. But we have substitutes for lath and shingles. The transmitting alchemists of the middle ages are followed by an age of the substituting chemist.

They have only begun their work. They have accomplished seeming impossibilities, and what they may not do, no one dare say. Some are at work trying to extract fertilizer from the air, others heat from the sun to be mechanically applied; already ether from the vastness of nature is our servant. The chemists are undertaking to lead in the world of science to produce practical results which will transform individual opinions and methods. Truly we live in a great age.

AEROPLANE BUILDING BY CARRIAGE BUILDERS.

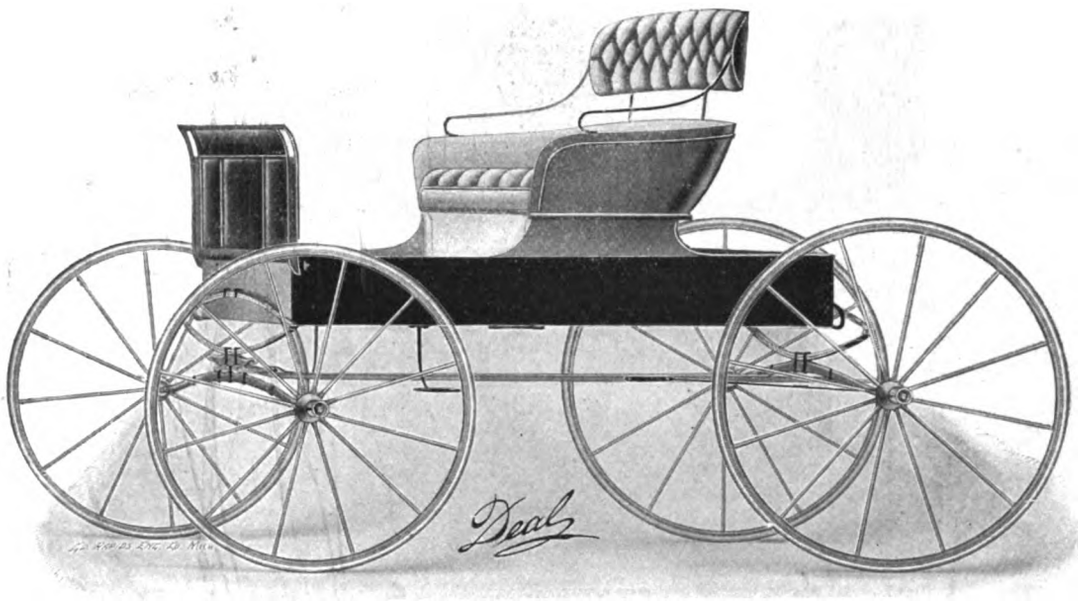
Having a few skillful body makers and an efficient trimmer, together with a stock of clean, straight ash, no carriage builder or wheelwright should hesitate in accepting the order of any flying enthusiast who may desire to have his plans and specifications for an aerial machine put into tangible shape. The carriage builder will find that at the present time all that is wanted of him is to carry out the instructions of the inventor, and he is not asked in any way to guarantee the flying powers of any machine which he may construct. This means, says the Automobile and Carriage Builders' Journal of London, that a considerable responsibility is removed, seeing that with horse-drawn carrages and motor bodies of all descriptions the builder has been bound to satisfy the customer that his work shall fulfill its requirements in actual service. In the construction of a single plane or wing the individual examining one for the first time will be surprised to note the enormous amount of work which is contained in one of the parts. Not only are the parts large, but their construction entails a great number of separate parts, but there is much repetition work, so that once the principle of the construction is understood, the general body of the work may be considered as being straightforward. Some of the lighter ash framework has often to be bent, but here again there need be no trepidation, as well known firms of timber benders have risen worthily to the occasion, and are ready to supply the timber properly fashioned ready for planing up and framing into position. Not only can the carriage builder make the framework of the flying machine, but given a good pattern to go by, he will find his body makers, after a little practice, able to make the propellers—for many of them are made of wood, and, again, ash is a most suitable material. So much for the woodwork. The trimmer is expected to cover the framework with waterproof silk or similar material, and as this is simply covering a plane surface there is no need for wrinkled brows or heavy contemplation in that respect, for there are no elaborate Roi des Belges corners to negotiate, but only to do the work tightly and neatly. If the inventor is not his own engineer he will probably ask the carriage builder to attach the wheels and some simple shock absorbing apparatus, so that the machine may alight on the ground without jarring on the aeronaut, and surely any smith or fitter can fix the simple tension wires which may be required, or make a clip or plate to strengthen any splicing which may be required in the woodwork. Such is the easy position in which the road carriage builder finds himself. Should he be approached on the subject of "unearthly" vehicles, and apart from accepting any order willingly, he should also for his own benefit study the subject of aviation from the cheap and excellent literature which is already available, so that he can supervise the construction of aircraft in his shops intelligently, and see that their construction is carried out economically so as to leave a margin of profit, which will be strongly reminiscent of the days when horse carriages were in greater demand.

TIMBER SUPPLY EXHAUSTED.

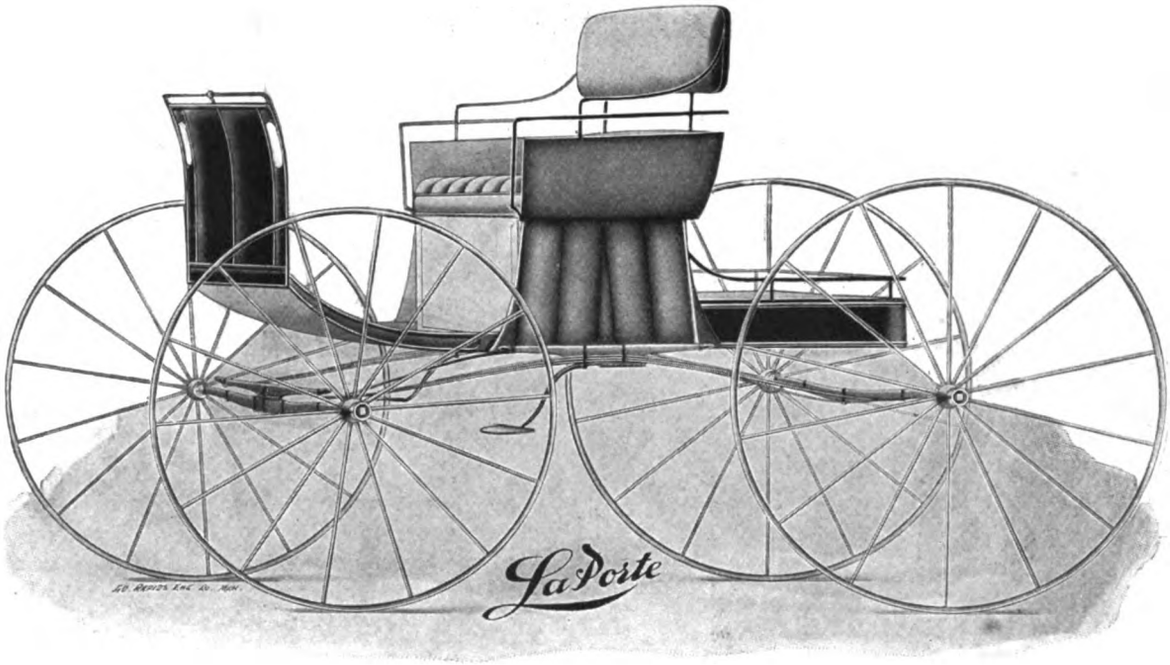
The Pocahontas (Ark.) Bending Works, a corporation engaged in the manufacture of agricultural and wagon timber for the past twelve years, has closed its operating plant. The business is being wound up by its former superintendent, J. C. Miller, the plant being owned by Nichols & Dean, of St. Paul, Minn. The reason for closing down is the timber supply has been exhausted.

Digitized by Google

Illustrated Carriage Section, February, 1910.

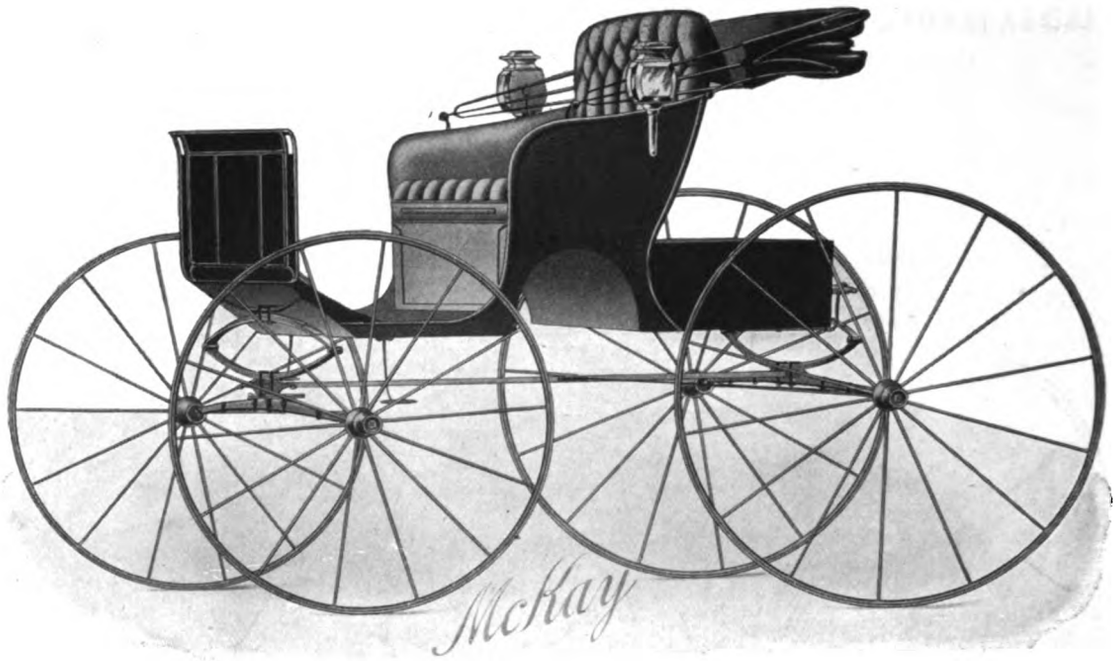


BIKE ROAD WAGON.
Built by The Deal Buggy Co., Jonesville, Mich.

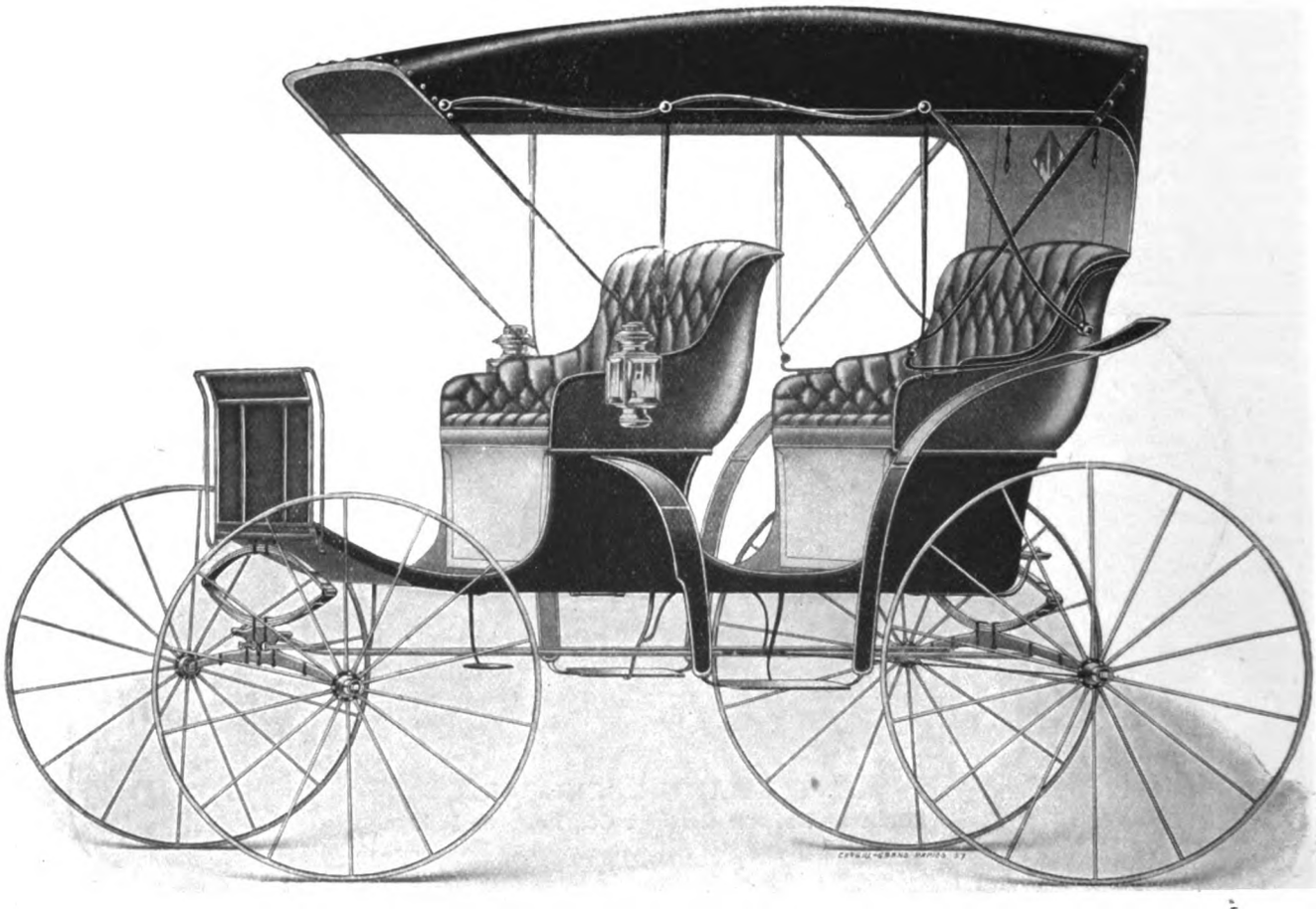


GENTLEMAN'S BUCKBOARD.
Built by LaPorte Carriage Co., LaPorte, Ind.

Digitized by Google

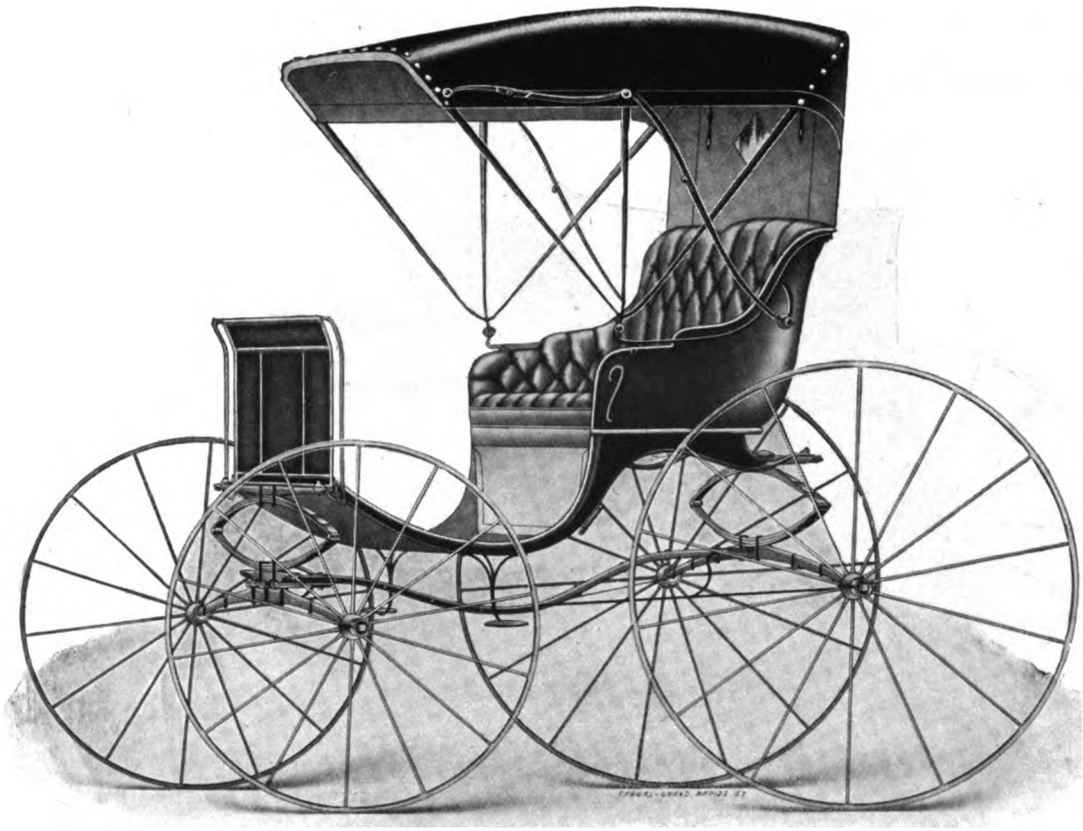


STANHOPE.
Built by McKay Carriage Co., Grove City. Pa.

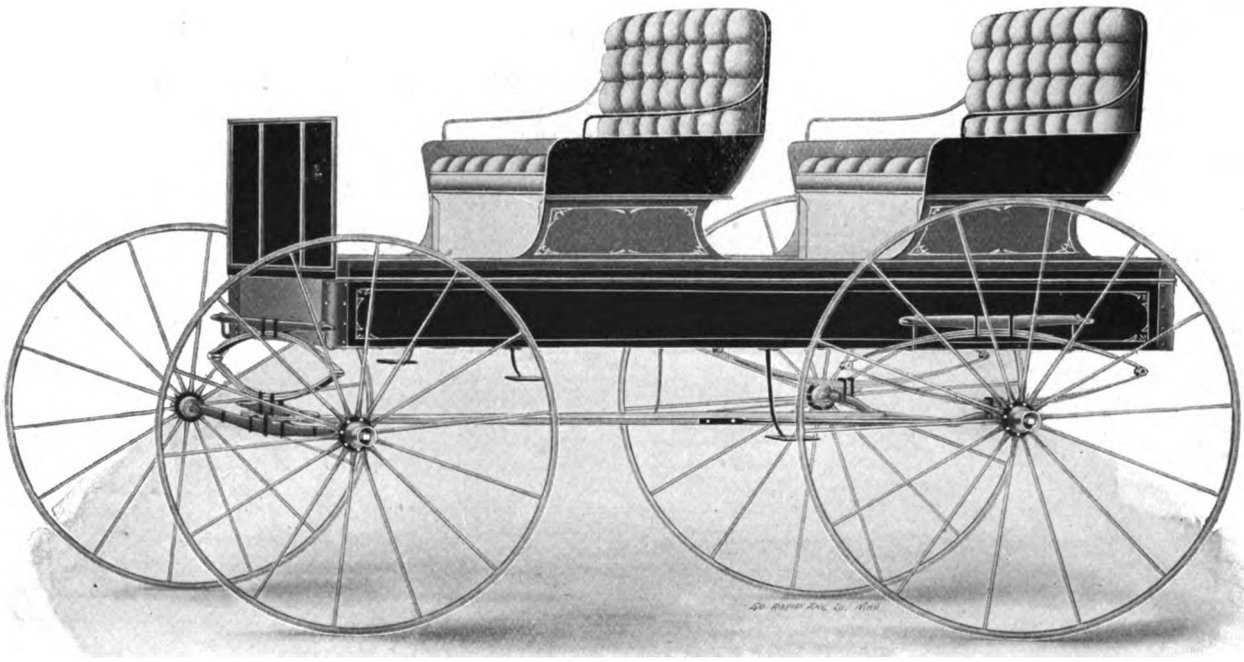


TWIN AUTO SEAT FAMILY SURREY.
Built by The F. A. Ames Co., Owensboro, Ky.

Digitized by Google

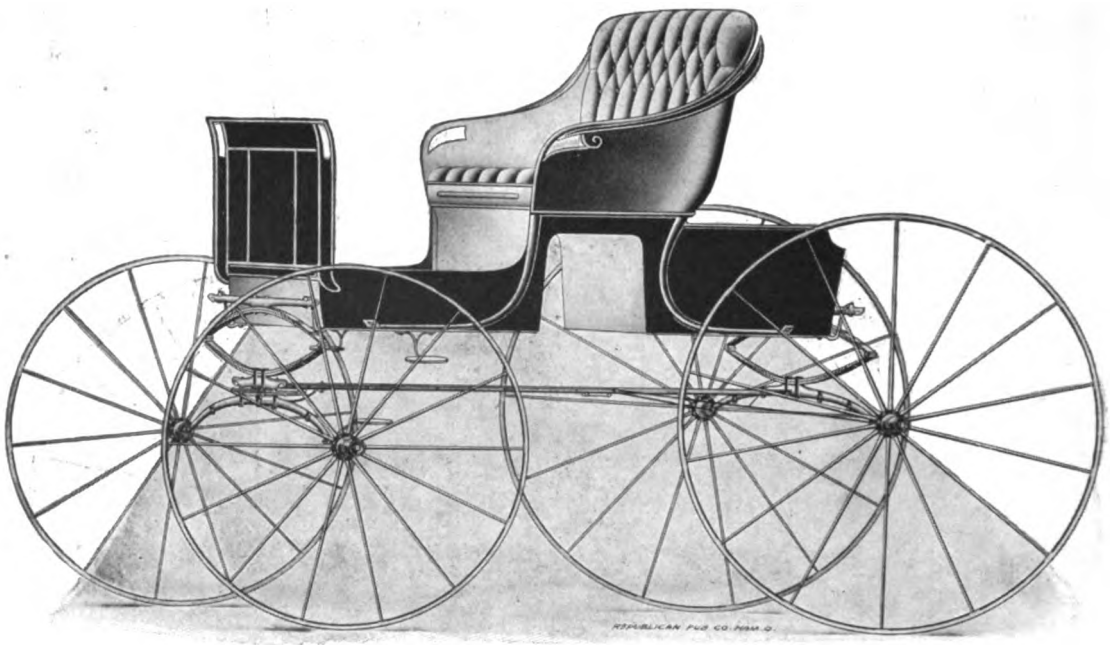


LIGHT AUTO PHAETON.
Built by The F. A. Ames Co., Owensboro, Ky.

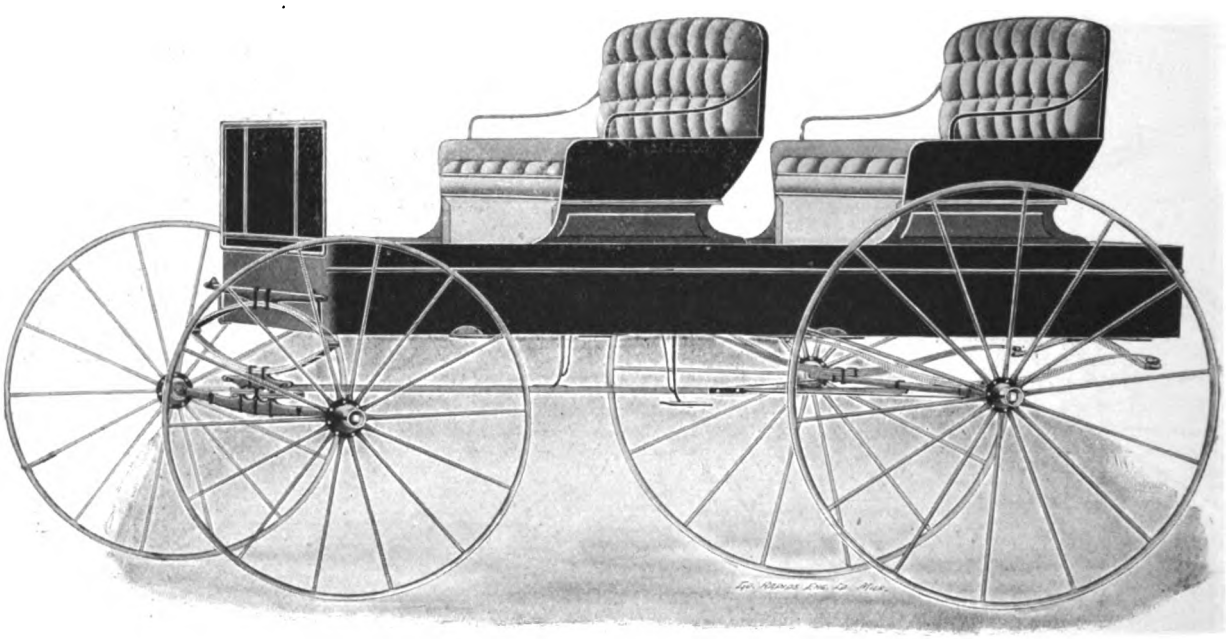


THRRE SPRING WAGON, No. 187.
Built by the Lull Carriage Co., Kalamazoo, Mich.

Digitized by Google



CUT-UNDER RUNABOUT; AUTOMOBILE SEAT.
Built by Staver Carriage Co., Chicago, Ill.



HALF PLATFORM SPRING WAGON.
Built by D. M. Sechler Carriage Co., Moline, Ill.

Digitized by Google

Wood-working and Smithing

LESSONS IN PRACTICAL CARRIAGE DRAWING.

In practical work, it is most essential that the draughtsman should be able to make drawing patterns, whether for scale

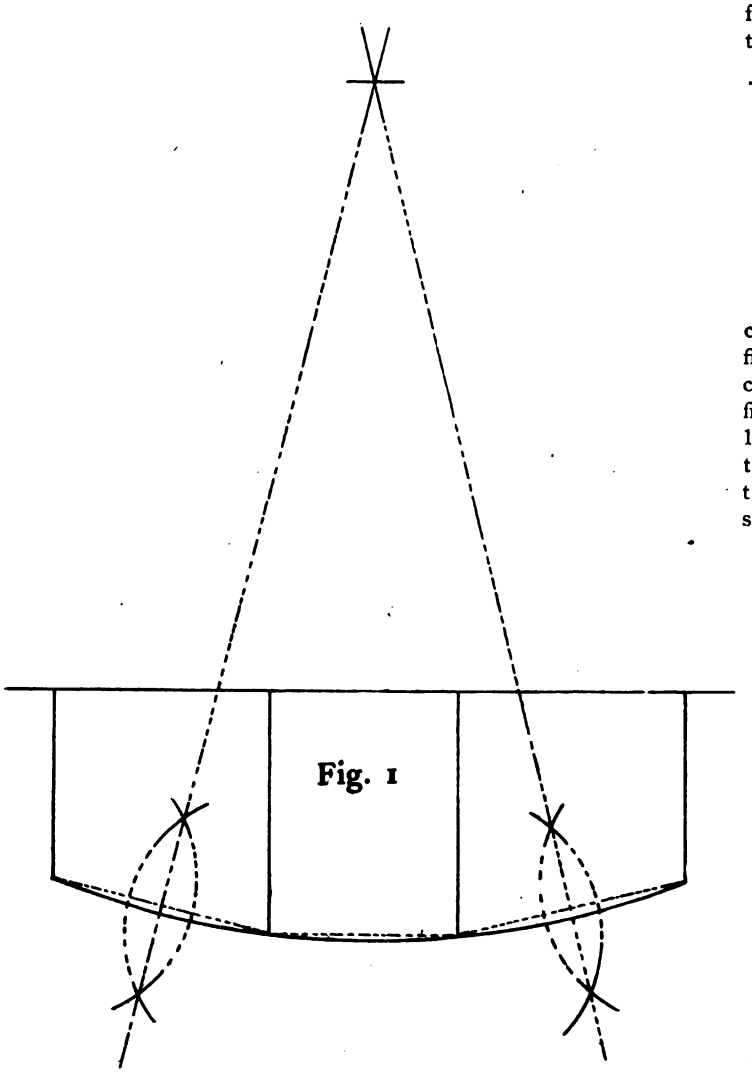


Fig. 1

work or for full size drawings, as is the proper practice in the workshop.

A draughtsman who is handy with tools, and belonging to any of the woodworking branches, will soon acquire this deftness. But to make a pattern with all the keenness of regularity,

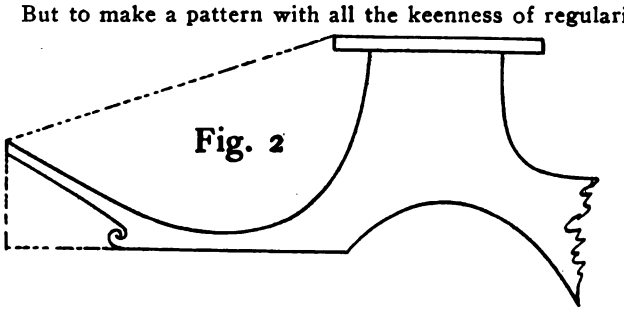


Fig. 2

together with a clean cut, requires the dextrous hand of a highly skilled workman, in the manner that a clean cut line in a drawing requires the practiced hand and artistic eye of the draughtsman, for one is part of the other, and they both spell, when leagued together, the word excellence.

Fig. 1 shows how to make the side sweep for a body geometrically, the curve takes in the back and front quarters, and the doorway of a landau body. The width across standing and shutting pillars is marked off, together with the width across front and back of body. The quarter widths are bisected and their points of intersection lined through: and where the lines

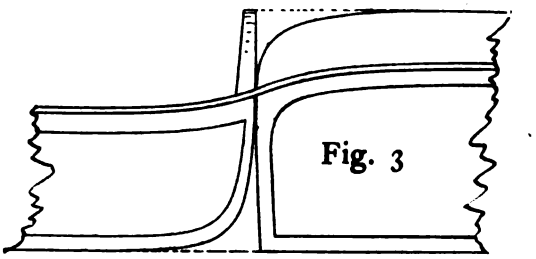


Fig. 3

cut each other gives the radius for the curve as shown in the figure. This is a valuable practical workshop lesson. The lesson can be further illustrated in Fig. 6, in which the problem is to find a regular curve, to take in three given points; the points 1, 2 and 3 are placed in irregular positions, and at unequal distances to each other. The method of procedure is to connect the points, and bisect them and connect these points with a straight line on each side, and where they cut each other, gives

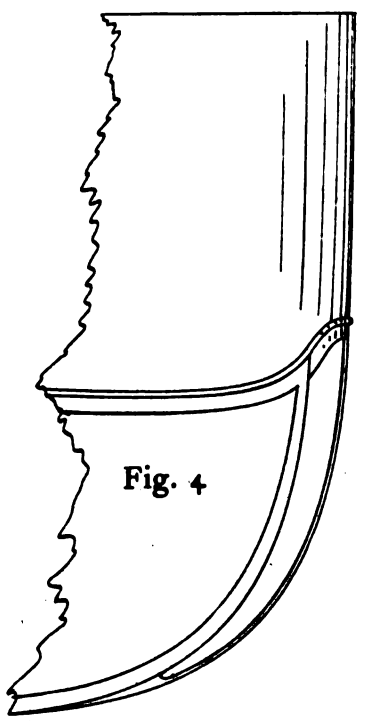


Fig. 4

the centre point from which to take the radius connecting the given points 1, 2 and 3, and this is the problem applied practically to Fig. 1.

Fig. 2 shows the section of a boot, in which it is shown what the distance from the front of the seat to the tip of the bracket should be, viz., not less than 25 inches. The angle of the bracket is also given. This should be so pitched that the angle of the leg from the seat should allow the foot to rest at right angles to it, and so take all strain off the sinews of the ankle. There is no settled angle for this, as a deep bootside, or a shallower one, both call for consideration in the length and angle of the bracket line, and this should be always studied in the drafting of boots, of whatever design.

Fig. 3 shows how the back of a body ought to be drawn, to

Digitized by Google

harmonize with the side or elevation from which it is projected, and the lines and angle of the metal beading.

Fig. 4 shows the back quarter section of a motor body, with

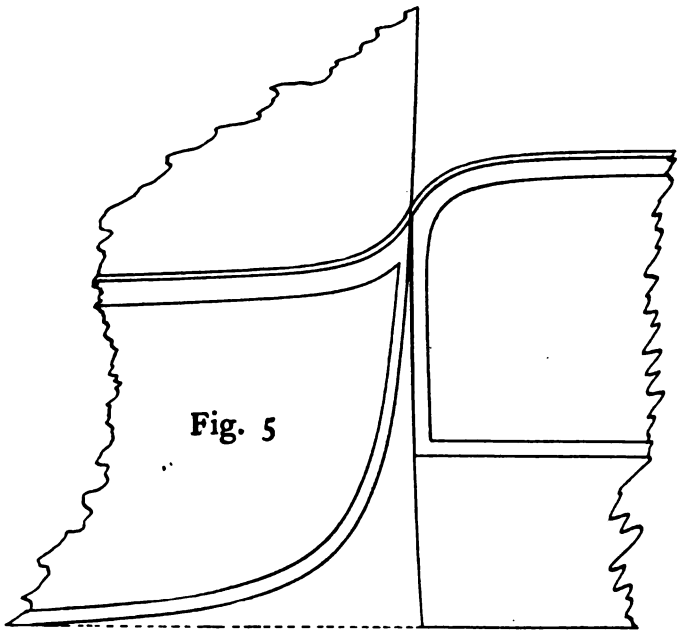


Fig. 5

rounding back, but with the centre line vanishing conically into the bottomside line. This diagram also shows the line of the back top cross rail, and the line of angle of the metal bead to joint on to the elbow.

Fig. 5 shows a deep quarter section of another style of motor body; the corner pillar line is individual. The diagram also

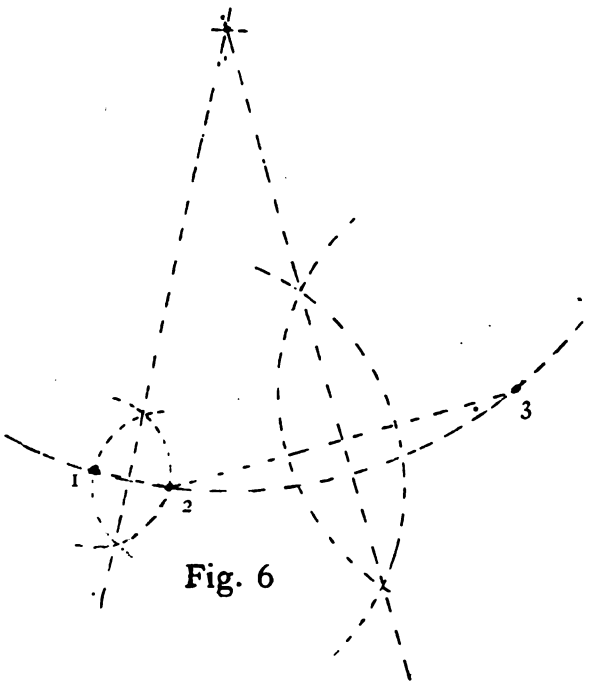


Fig. 6

shows the lines of the back panelling and moulding and also the metal bead line from the elbow to the cross back rail, and its jointing. These diagrams are not only instructive from a draughtsman's standpoint, but they are practical, and their application is needed every day in the workshop.

AFTER THE GLEN ALLEN WORKS.

The Business League, of Greenville, Miss., went into the matter of the removal to Greenville of the Glen Allen wagon works. A proposition was made to Greenville and it has been practically accepted.

LEATHER VS. CANVAS.

Mr. Henry Sturmey, in answering a correspondent in the London Motor, as to whether leather hoods are heavier than canvas, expresses himself in the following terms:

I would say that it depends on the leather and on the canvas. There is leather and leather, and also canvas and canvas. In the days of the old-style coachbuilder, before motor cars came in and when carriages were built to last a generation, the leather hood was a construction of great substantiality. The leather was heavy and thick, and its necessary weight compelled heavy iron work and massive bows to support it. The result was decided weight and—such is the association of ideas—people who had had experience of the old style hoods, without inquiring further, associated weight with leather, so that the entirely novel, and manifestly light canvas—miscalled "Cape cart"—hood at once appealed to the imagination as being something vastly lighter than the leather constructon hitherto known. And this, undoubtedly, was one of the principal causes of the sudden rush into popularity of the canvas hood. That this idea was prevalent I once had positive proof, for, five or six years ago, I was interested in the handling of a light American car, which was fitted with an exceedingly neat and light black leather Victoria hood. These cars were being shown at an exhibition at the Crystal Palace, and one of them was shown with the hood detached, the latter being on the ground adjoining it. A gentleman came up and got into conversation, and in the course of it, referring to the hood, he said: "Oh, I wouldn't have one of those things!"

I asked him why, and his reply was: "They are so heavy." In order to remove this misconception, I at once turned to the attendant and said: "Lift it," and, each of us putting a single finger under the bow stretcher, it was lifted without an effort. The motorist was astonished, and the only thing he could say in response to this ocular demonstration, was an ejaculation of surprise and the remark, "Mine weight two cwt.!" And then, of course, with this idea of the necessary (?) weight of a leather hood, when a light one was shown to them, it, apparently, at once occurred to people that it must necessarily be flimsy and could not possibly be strong enough for the work.

If properly made of suitable quality, there is no reason why a leather hood should be materially heavier than a strongly-constructed canvas one. The leather used is of a fine quality, and of no great thickness or weight, and, with light wood bows to support it and hollow steel bow sockets, the entire construction can be made both strong and light. It is possible, it is true, to make a canvas hood lighter still by using very thin material, but very thin canvas hoods rapidly depreciate and get shabby, frayed, ragged and torn. In regard to wear, there is no comparison between the canvas and the leather hood, although the latter, of course, costs more, and I may say that my testers are using one of those leather hoods to-day on their test cars, this particular hood having been made quite five years ago.

BOSTON CARRIAGE BUILDERS HOLD ANNUAL MEETING.

The eighth annual banquet of the Carriage manufacturers' association of Boston and vicinity was held at the Revere House on the evening of January 24, and 150 members were present. At the business meeting the following officers were elected: Robert E. Harrison, president; Willis R. Russ, vice-president; Albert T. Taylor, secretary and William P. Stone, treasurer.

The speeches were by various members, and vocal and instrumental vaudeville numbers were contributed by the members also. The committee of arrangements was Willis R. Russ, chairman; M. W. Quinlan, Jr., Albert A. Sargent, H. F. T. Thanish and James Waddell.

A SUGGESTION.

It is possible to equip the wood shop both as regards power and even light, very inexpensively since the introduction of the gasoline engine.

Quite an excellent plan is to buy a small combined two-cycle motor and direct coupled charging dynamo; the latter will supply lighting current for the workshop and also for the house if desired, while the motor will always be ready for its main purpose of driving the shop.

Digitized by Google

UNCLE SAM'S WOOD PILE.

The Forester has issued his brochure on forest products, as of the year 1908, and some of the findings may be of use or interest to our readers. No attempt to make a continued story is intended, just the salient points as they come under review.

Speaking of oak: The kinds of oak most used are white, red, chestnut, chinquapin, bur and Spanish. The production has heavily fallen off in the last ten years. In 1908 it was less by some 947 million feet than in 1907, a decrease of over 25%.

Among the principal oak lumber producing states the decreases from 1907 to 1908 were as follows: Kentucky, 138,863,000 feet, or 30.4 per cent.; West Virginia, 148,899,000 feet, or 31.9 per cent.; Tennessee, 57,836,000 feet, or 16.2 per cent.; Arkansas, 86,431,000 feet, or 28.3 per cent.; Pennsylvania 109,229,000 feet, or 34.6 per cent., and Ohio 70,305,000, or 25.9 per cent.

Production of oak lumber, 1900 to 1908.

Year.	Quantity (M. feet B.M.)	Average value per M feet.
1908	2,771,511	$21.23
1907	3,718,760	21.23
1906	2,820,393	21.76
1904	2,902,855	17.51
1900	4,438,027	13.78

The cut in 1908 was but little more than three-fifths as much as in 1900, and it is probable that the total cut of oak lumber will never again be as great as it was in that year.

The supply of oak in the Northern States has been largely cut out, and now the Southern states are being heavily drawn upon. In 1900 Indiana ranked first in oak production, with 649,794,000 feet, or nearly four times as much as in 1908, and in the same year Ohio was second, with 596,618,000 feet, or nearly three times as much as in 1908.

Red gum is one of the woods which has become prominent in recent years. Notwithstanding the fact that the cut in 1908 was 14.5 per cent. less than that in 1907, it was yet more than double the output of 1900. The average production of red gum lumber per mill in 1908 was 197,900 feet. Red gum is widely distributed throughout the Central and Southern States, but Arkansas has been the largest producer of red gum lumber since statistics concerning the production of this species have been collected.

Basswood, like birch, while of comparatively wide occurrence, is manufactured into lumber on a relatively large scale only in a few states. Wisconsin has a strong lead in the production of basswood lumber, furnishing 34.5 per cent. of the total cut in 1908. The cut in this state was, however, 37,574,000 feet less in that year than in the preceding year, and in Michigan it was approximately 11,000,000 feet less, while in New York the output was slightly greater in 1908 than in 1907. These three states cut more than five-eighths of the total quantity produced in the later year. In 1908 the average values of basswood lumber in the principal states ranged from $15.99 per thousand feet in North Carolina to $24.18 in Indiana. The production of basswood has been fluctuating within rather narrow limits for the past eight years.

Although the reported cut of 1908 is greater than that of 1907, the maximum production of elm lumber was passed several years ago. The reported production was approximately 13,000,000 feet more in 1908 than in 1907, the increase being 5.1 per cent. As in the previous year, Wisconsin was the leading state in the manufacture of elm lumber, the output in that state being approximately 6,000,000 feet more in 1908 than in 1907. The cut in Michigan was nearly 15,000,000 feet greater in 1908 than in 1907, and this state was second in rank in the later year; on the other hand, the output in Indiana fell off over 12,000,000 feet and the state dropped from second place to fifth place in 1908.

The name "redwood" is used commercially to cover two distinct species, the coast redwood (Sequoia sempervirens), which grows chiefly in a narrow belt along the coast, north of San Francisco, and the "big tree" (Sequoia washingtonia), which is confined to a limited region on the western slope of the Sierras. Only a small amount of "big tree" lumber is manufactured, however, nearly all of the commercial supply of redwood being furnished by the coast species. Redwood is unique in that it is cut in only one state, California, and in very restricted portions of that state.

The proportion of the total cut of redwood lumber which is exported is greater than that of any other kind manufactured in the United States. In 1908 the foreign shipments of redwood lumber from Humboldt, Mendocino and Del Norte counties, the principal regions of production, amounted, according to the reports of the Lumber Record Bureau, of San Francisco, to about 58,000,000 feet. This was the largest exportation of redwood ever recorded.

Ash is widely distributed in the eastern half of the United States, no state distinctly leading. The output of the thirty-seven states reporting for 1908 was a decrease of nearly 27 million feet from the cut in 1907. Michigan and Arkansas each furnished 9% of the total, Ohio and Indiana almost the same. About 8 per cent. was cut in Wisconsin, and nearly 7 per cent. in Tennessee and New York. Other considerable sources of supply are in Mississippi, Missouri, Kentucky, Louisiana, Pennsylvania, West Virginia and South Carolina. While there has been no decided change in the total cut of ash for eight years, the quantity supplied by some states has changed greatly. The total cut in 1900 was 268,120,000 feet, or 43,753,000 feet more than the cut in 1908. Of this production in 1900, however, Michigan supplied 85,753,000 feet, or more than four times as much as was cut in that state in 1908.

Production of ash lumber: 1900 to 1908.

Year.	Quantity (M. feet B.M.)	Average value per M feet.
1908	225,367	$25.51
1907	252,040	25.01
1906	214,460	24.35
1904	169,178	18.77
1900	269,120	15.84

In 1908, mills in 34 states report a cut of hickory lumber that was approximately 6,000,000 feet less than in 1907, a negligible decrease, considering general conditions.

Hickory Lumber.

Number of active mills reporting and quantity and value of cut, by states: 1908.

STATE.	Number of active mills reporting.	QUANTITY. M feet B. M.	QUANTITY. Per cent distribution.	Total value.	Average value per M feet.
United States	[1] 5,330	197,372	100.0	$5,853,326	$29.66
Arkansas	248	31,276	15.8	1,200,998	38.40
Tennessee	476	24,881	12.6	708,113	28.46
Indiana	662	21,208	10.8	653,849	30.70
Kentucky	537	20,791	10.5	571,782	27.50
Ohio	725	17,289	8.8	494,638	28.61
Missouri	356	16,382	8.3	417,996	25.50
West Virginia	331	12,720	6.4	239,645	18.84
Mississippi	88	12,206	6.3	304,021	40.06
Pennsylvania	580	8,371	4.2	174,305	20.83
Illinois	307	7,133	3.6	196,310	27.86
All other states [2]	[1] 1,040	24,835	12.6	691,636	27.85

[1] Not including New York.
[2] Includes mills distributed as follows: Alabama, 71; Connecticut, 123; Delaware, 7; Florida, 7; Georgia, 61; Iowa, 40; Kansas, 4; Louisiana, 22; Maine, 2; Maryland, 63; Massachusetts, 52; Michigan, 77; Minnesota, 1; New Hampshire, 9; New Jersey, 44; New York (number of mills cutting this species not reported); North Carolina, 137; Oklahoma, 49; Rhode Island, 13; South Carolina, 18; Texas, 10; Vermont, 9; Virginia, 193; and Wisconsin, 18.

About one-half of the total quantity of hickory lumber reported was manufactured in Arkansas, Tennessee, Indiana and Kentucky.

Production of hickory lumber, 1900 to 1908.

Year.	Quantity (M. feet B.M.)	Average value per M feet.
1908	197,372	$29.66
1907	203,211	29.50
1906	148,212	30.42
1904	106,824	23.94
1900	96,636	18.78

Digitized by Google

MITCHELL-LEWIS COMBINE.

News in Detail of the $10,000,000 Combination—No Bonds or Floating Indebtedness.

We have mentioned the consolidations reported as affecting the Mitchell-Lewis Company. We now can give the news more in detail. Papers for the incorporation of the Mitchell Motor Company, with a capitalization of $10,000,000, without bonds or floating indebtedness are filed.

The new company is the amalgamation of the Mitchell & Lewis Company, limited, manufacturers of wagons, and the Mitchell Motor Company, manufacturers of automobiles, both among the largest of the industries of Racine, Wis.

It is promised that within two years' time the combined enterprises will employ in the neighborhood of 5,000 men.

Captain William Mitchell Lewis is the president and general manager of the concern and will be its active head, his father, W. T. Lewis, who has been president of both institutions, retiring from active participation in the business, and turning everything over to his son. The senior Lewis, however, remains identified with the new company in an advisory capacity, being chairman of the board of directors.

The amalgamation of these two big institutions brings under one management the entire interests of the Mitchell and Lewis families of Racine. The present plants of the new corporation cover a total of forty-seven acres and employ several thousand men. The wagon company alone has been doing a business of over $3,000,000 a year for some time, while the motor works, started in 1905 by William M. Lewis with forty men, now employs 1,500, and is doing a business nearly equal to that of the wagon concern, turning out 6,500 automobiles in a year.

The new company's line of manufacture will be the regulation pleasure cars, light motor delivery wagons, a heavy motor truck, the fast growing popular taxicab and a light convertible motor wagon suitable for farmers' use.

The new company will also make practically all of its own bodies, wheels, springs, forgings and castings.

The farm wagon industry will be largely increased and the capacity will be in excess of 30,000 farm wagons a year, and it is the intention, Capt. Lewis says, to increase the facilities for the manufacture of spring wagons.

The officers of the new company are: President and general manager, William Mitchell Lewis; first vice-president, G. B. Wilson; second vice-president, Henry G. Mitchell; treasurer, Frank L. Mitchell; secretary, G. Verner Rogers; assistant secretary, H. E. Redman; assistant treasurer, Henry Plow; chaiman of directors, William T. Lewis.

Henry M. Mitchell will devote his time to the management of the spring wagon department. Frank Mitchell will took after the financial end of the business as treasurer, and will also take care of the foreign investments of the new corporation, which are considerable in all European countries and in Brazil and Argentina.

The motor end of the industry will be cared for the same as heretofore, by J. W. Bate, to whose efforts officials of the company say, in no small way is attributed the success of the Mitchell company.

The Mitchell & Lewis Company is one of the oldest, if not the very oldest, manufacturing concerns in the Northwest, being started at Fort Dearborn (Chicago) in 1832 by Henry Mitchell, grandfather of William M. Lewis, and brought to Racine in 1847 by Henry Mitchell. In 1865 William T. Lewis, father of William M., the man who now assumes control, was admitted to the company. Later the two sons of Henry Mitchell—Frank L. and Henry G.—together with the son-in-law of Henry Mitchell, the late C. D. Sinclair, were admitted.

The Delmar Auto Body and Wheel Co. is the style of a new Indianapolis concern under the management of E. H. Hobig and E. E. Weir.

GOLDEN ANNIVERSARY.

Surrounded by more than 800 friends, representing nearly every section of the country, Mr. and Mrs. John Mohler Studebaker celebrated the culmination of fifty years of wedded life, the golden wedding anniversary being observed at their residence, Sunnyside, South Bend, Ind., January 3d.

The celebration was distinctly the social event of many years in northern Indiana. Chicago, New York, and even San Francisco were represented among the guests, whose presence were requested by invitations of gold. A large golden book containing the engraved portraits of Mr. and Mrs. Studebaker was the gift to the couple of the citizens of South Bend. The couple received hundreds of congratulatory telegrams from all parts of the world.

The marriage of the Studebakers took place on the night of January 2, 1859, on the farm of the bride's parents, south of the city of South Bend. The bride was Miss Jane Stull.

Mr. Studebaker is the last of a family of five brothers, who began the manufacture of wagons in a small blacksmith shop with a capacity of less than one wagon a week, but who by thrift and enterprise developed their business into the largest plant of its kind in the world.

MEETING OF WAGON MAKERS.

A convention of the Southeastern division of the National Wagon Manufacturers' Association was held in Charlotte, N. C. The division embraces Virginia, North Carolina, South Carolina, Georgia, Alabama and Tennessee, and each of these states was represented at the meeting. The most important matter to come up in the discussions was the difficulty now experienced by the manufacturers in getting their material delivered, this being due to the scarcity of hardwood throughout the country. Among those present were: B. M. Blount, of Atlanta, president of the National Association; C. F. Milburn, of Chattanooga, secretary; W. N. Hackney, of Wilson; W. H. Geitner, of Hickory; W. H. Russell, of Clarksville, Va.; B. P. Thornhill, of Lynchburg; J. C. Harris, of South Boston, Va.; John T. Ashcraft, of Florence, Ala., and A. F. Thomas, of Lynchburg.

WILL REMAIN IN RACINE.

The fire in Racine Mfg. Co., Racine, Wis., was not as bad as reported. The company notify us as below:

"Although it is but six weeks since one of our large factory buildings was destroyed, we have resumed operations in practically the same proportions as before and are now delivering finished product to our patrons. While it is true that many attractive offers were made us to establish elsewhere, we have not seriously considered doing so and it may be definitely stated that we will continue at the same location in this city.

"Since the fire, we have equipped a new factory building which was completed just prior to the fire. We have it equipped with entirely new and modern machinery and is now in full operation as is also our factory No. 2, which was not destroyed. In a very short period of time, we will operate on even a larger scale than at any time in our past history."

CORRECTION.

The item in regard to a fire that destroyed a small part of the shaft department of the factory of S. G. Gay, at Ottawa, Canada, was chronicled as a totally destructive fire. This mistake was due to the source of our information. Such press errors are not of frequent occurrence, fortunately, but when they do crop out, we always have cause for regret. No harm of any consequence occurred in the Gay factory, and the business has proceeded without interruption.

Digitized by Google

PAINTING AND UPHOLSTERING

BODY PAINT.

Some of the suggestions about body painting that the automobilist has to offer, are at least pleasant reading, and serve to show how badly the expert carriage painter is needed in the matter of painting car bodies:

"Some may be interested to know of a paint which I discovered several years ago and have at various times found particularly serviceable when, for one reason or another, a coach-painter's varnish finish is not desired," says a car owner. "Velure is the name of the preparation in question, and, strictly speaking, it is neither a paint as ordinarily understood, nor an enamel, but a japan paint. It is very thick, and a little of its goes a long way, while it dries with a surface that, if well applied, no one would suppose had not been varnished. Amongst other advantages it stands a lot of knocking about, shows no spots from rain or mud, and does not in damp weather take a "bloom" as varnish does. I think that a single coat of Velure on a well-prepared surface of the same color must be equal in durability, and closely approaching in appearance, to several coats of ordinary paint and varnish. The only objection I have found to its use when one is in a hurry is that it requires several days to harden properly, its elastic properties depending on slow drying. One of my cars is finished in French Grey Velure, and has been a great success, as I took the body "in the grey" and had this put on before using the car, and as a result found it so smart that I have since used "no other," avoiding the car being laid up at a coachbuilder's for three weeks to be "finished."

"Several other shades of this stuff I have used on different occasions with equal satisfaction, and if anyone knows a better substitute for about fifteen coats of paint and varnish I shall be glad to hear of it. I believe it is used a good deal for yachts and boats."

Thus it will be seen that every man can do his own job of painting, according to the writer quoted, and aid in making the advent of the real coach body painter a sure event.

COMPLEMENTARY COLORS.

There is some misapprehension as to what the above exactly means, the Modern Painter thinks, so it proceeds to elucidate:

It would require much more space than is available to give a full and satisfactory reply to our Southern friend; but a synopsis of it, or outline, is given below, which will give him an idea of it.

It is well understood that white is the result of a perfect combination of all colors which can be derived from the the three primaries, red, yellow and blue. The approximate proportions in which they occur in the mixture being: Yellow, 3 parts; red, 5 parts, and blue, 8 parts. Now the secondaries and tertiaries must stand in their equivalents of the three primaries in order to produce a perfect harmony. They must, besides, be required to form white light in the three primaries themselves.

The following shows a few examples of complementary colors. Thus in the primaries, red needs green a compound of yellow and blue, the other two primary colors. Blue needs orange, which is a combination of yellow and red, and yellow needs purple, which is a combination of red and blue. If you cut out pieces of gray paper in an ornamental form and stick a piece on each of the three primaries, it will be found that in a shaded light the gray will be fully tinted by the complementaries of these colors. Of course precise rules can hardly be laid down, as so many things occur which would modify them somewhat. An experienced painter can bring any two colors together by properly modulating them. A few contrasts are here given which may be of use to our friend: Black and warm brown violet and pale green; violet and light rose color; deep blue and golden brown; chocolate and bright blue; deep red and gray; maroon and warm green; deep blue and pink; chocolate and pea green; maroon and deep blue; claret and buff; black and warm green.

HARDWOOD FINISHING.

There is seen a tendency to finish touring car bodies of motor cars without varnish. It is thought the dust can be more easily gotten rid of with an oil finish, and it is not a matter of any moment if greasy hands get on the woodwork.

There are some considerations on the subject of hardwood finish which we find in London Work, that may have a certain value in the paint shop:

The acid or vitriol finish is of German origin, and forms no part of French polishing itself. The idea is to clean out excess of oil with the acid and also harden the polish so that it will show no finger marks. That is, every vestige of oil is removed, leaving only the hard French polish. The transparency of work depends mainly on the use of high-grade polishing materials, which include a polish made from bleached shellac, in order to keep the inlaid portions as clear as possible.

If it is desired to try the effect of the acid finish, the polishing should proceed on the usual lines until the spiriting-out stage is reached, the oil smears removed, and only spirit smears remaining. The surface is then pounced with Vienna chalk tied up in a pounce-bag. Sulphuric acid diluted with ten times its bulk of water is then used for wiping off the chalk, and should leave the surface hard and bright.

How to Rub Varnish.

Use the pulverized pumice stone freely when you begin to rub varnish. Diminish the amount after you have rubbed a while. This means that at first there will be a lot of material to rub away on but that after a time this material will have greatly lessened and then you will have to be careful or you will cut into the lower coating. While water cuts faster and easier than oil, yet there are times when oil is best, as when there are joints or something that water would get into and damage. Uniform rubbing is what is required in order to get satisfactory results. A well-rubbed surface will have a satiny appearance, the pumice marks being rubbed out with pulverized rottenstone and water. Upon such a surface it is easy to flow a full coat of varnish and get a pleasing finish.

Varnish Polishing.

After the wood has been properly filled the surface must be brought up with shellac, and on this apply a good flowing coat of polishing varnish. In due course this coat will be ready for the polishing. Rub it with No. 00 pulverized pumice stone and water, which will remove any specks of dust or nibs. The rubbing should be carefully done and to a uniform depth. After the rubbing and washing off clean, we are ready for the polishing.

Cabinetmaker's Stopping for Wood.

Cabinetmaker's stopping for wood is called beaumantique. It is made as follows: Put 1 tablespoonful of shellac gum, 1 teaspoonful of pulverized rosin, a lump of beeswax the size of a walnut, all into a cup or iron pot. Set this vessel on the stove and allow the contents to melt. For use on mahogany add a little Venetian red, to match up the wood. For oak add a little yellow ochre or raw sienna, with a little umber or black for a darker oak. For ebony or rosewood add a little lampblack. Mix the mass well together.

The stopping may be used in the liquid state, or it can be

Digitized by Google

made into sticks like sealing wax, by pouring it onto a board and rolling it out like dough. This is the better way and by having a variety of colors it is always at hand for immediate use. When wanted for use, it may be heated with a candle and run into the place it is intended for. Level off with a chisel and make smooth with very fine sandpaper.

Of course, the above do not quite come into the purview of the coach painter, but it might be a matter of adopting methods to secure results not always contemplated in a regular way.

SOMETHING ABOUT "TURPS."

Statistics concerning the production of turpentine were secured by the Department of Agriculture, and some of the conclusions and tables adduced are not without interest to those who have to buy and use the article.

In 1908 the product of 1696 establishments had a value of over 31 million dollars, based on the Savannah price. This was a decrease of over three million dollars compared with 1907. Florida and Georgia produced nearly three-fourths of the supply.

Georgia had a larger number of establishments, but Florida the much greater product. Florida, with 37.3 per cent. of the total number of establishments in 1908, furnished 45.7 per cent. of the total value of the output of the industry, while Georgia, with 39.3 per cent. of the total number of establishments, contributed 28.2 per cent. of the total value of the product.

The average value of the output per establishment was slightly less than $13,500 in Georgia and a little more than $23,000 in Florida. Operations are much older in Georgia than in Florida, and their point of highest production has been passed. The greatest value of product per establishment was reported from Louisiana, the 25 establishments in that state in 1908 having an average output valued at $58,650. In Louisiana turpentining operations are younger than in the eastern territory; they are on a more extensive scale, and the timber is larger. A combination of all these factors results in a heavy average output per establishment. Louisiana and Texas were the only states in which the value of the output in 1908 was greater than in 1907. This was due chiefly to the larger number of establishments operating in 1908. Only within the last few years has turpentining taken place in Texas at all.

The boxing of longleaf pine for turpentine and rosin was carried on in North Carolina on a considerable scale previous to the Revolution. As the timber in each locality was worked out, operations moved to new supplies, so that the path of the industry has been from North Carolina through South Carolina into Georgia, which became the most important naval-stores producing state in the early eighties, and then into Florida, the latter state having taken the lead since 1900. Now the trend of the industry, as ever following virgin timber, is toward the west, as is indicated by the recent production in Louisiana and Texas.

The total production in 1908 was 7 per cent greater than in 1907. On the other hand, the value of the product was over $4,000,000 less than in the previous year, a decrease of nearly 23 per cent. With the exception of North and South Carolina, every turpentine-producing state had a greater output in 1908 than in 1907. The largest actual increase—over 11,450,000 gallons—took place in Florida, while the largest relative increases were in Louisiana and Texas, the increase in the former state being 50 per cent. and in the latter nearly 170 per cent. Of the total production of turpentine in 1908, Florida reported 46.5 per cent, Georgia 28.3 per cent., Alabama, 10.2 per cent; Mississippi, 6.2 per cent.; Louisiana, 4.6 per cent., and North Carolina, South Carolina and Texas combined, 4.1 per cent.

While there has been no marked change for a number of years in the total quantity of turpentine produced, there has been a decided change in the centre of production, as the forests which constituted the first source of supply are worked out. The total production of turpentine in 1900 was 38,488,170 gallons, or 5.2 per cent. more than in 1908. In 1900 the production in Georgia was 15,595,341 gallons, or more than 40 per cent. of the total quantity produced in that year. In Florida the output in 1900 was 12,075,678 gallons, or over 31 per cent of the total production. The production of turpentine in Alabama in 1900 was practically the same as in 1908. The Mississippi output in 1900 was 3,277,617 gallons, or 43.9 per cent more than in 1908. In North and South Carolina the total quantity of turpentine manufactured in 1908 was but little more than one-third the product in 1900.

More than half of the turpentine and rosin produced in the United States is exported.

FINE STAIN EFFECTS.

Lemon Wood.—Taking sycamore for our purpose, as being the best adapted, prepare a hot solution of gamboge in turpentine for the stain and apply in the usual manner. This gives a very beautiful imitation of lemon wood.

Lignum-vitae.—To imitate this wood, employ a hot decoction of madder—sycamore or beech being good for the purpose. After the dye is dry coat is over with sulphuric acid. As soon as the wood appears black enough, wash off with clear cold water.

Coubaril Wood.—Stain maple, sycamore or beech with a hot decoction of logwood or Brazil wood. When this has become quite dry, wash it over with sulphuric acid to the desired color.

Red Ebony.—Sycamore wood takes the best for this imitation. First mordant it with a hot alum solution. When this has become dry apply a hot solution of Brazil wood. When this in turn has dried, apply a cold solution of copper acetate.

Jacaranda—Violet wood. Walnut, cherry or beech may be used. Apply a hot decoction of Brazil wood and potash. Make the veins, seen in the real wood, with a solution of sulphate of iron. Or by another method you may use pear, ash, elm, alder, poplar, birch, in addition to the other woods named above, by applying a hot solution of walnut shells, 5 parts; acetic acid, 1 part; water, 80 to 100 parts. To get the desired effect it may require several coats of the stain, or a soaking if that be convenient.

Cheap Brown Stain.—Permanganate of potash at the rate of ¼ ounce to the quart of water, which must be hot, will give a very good cheap brown stain. Apply the stain freely, while hot, giving several coats according to the depths of shade desired, the more coats the deeper the brown. At first the color is a bright magenta, but very soon this passes into the brown color. The finish may be almost anything, from a rub with boiled oil to a wax finish.—Modern Painter.

MASURY REUNION.

The annual meeting of the representatives of John W. Masury & Son was held in the laboratory attached to the works in Brooklyn, New York, on January 18. Representatives of the firm were present from all the states and territories and the business of the past, together with plans for the future, were earnestly discussed.

The meeting wound up with a dinner at Burns' on West 44th Street, New York City, at which Mr. John W. Masury, president of the concern, presided. The occasion was very enjoyable, addresses were made by every one present, in which loyalty to the house was pledged, together with the resolution to keep the character of the goods manufactured up to the standard of purity and quality maintained in the past.

The occasion was particularly enjoyable, good fellowship and mutual help between the manufacturing department and selling department being the prevailing motive.

The Showalter Manufacturing Company has just been incorporated at Indianapolis, Ind. D. H. Showalter is president, and H. G. Showalter will be vice-president and general manager. They will manufacture automobile bodies in Connersville, Ind.

Digitized by Google

TRIMMING A LIGHT BUS WAGONETTE.

The upholstering of motor bodies in all their varied styles of rich art, have infused new lines into the trimming of carriages.

To the ordinary carriage builder, such a leverage from the concrete settlements in trimmings has become as an awakening from their drone-like lethargyness, to a feeling that the up-

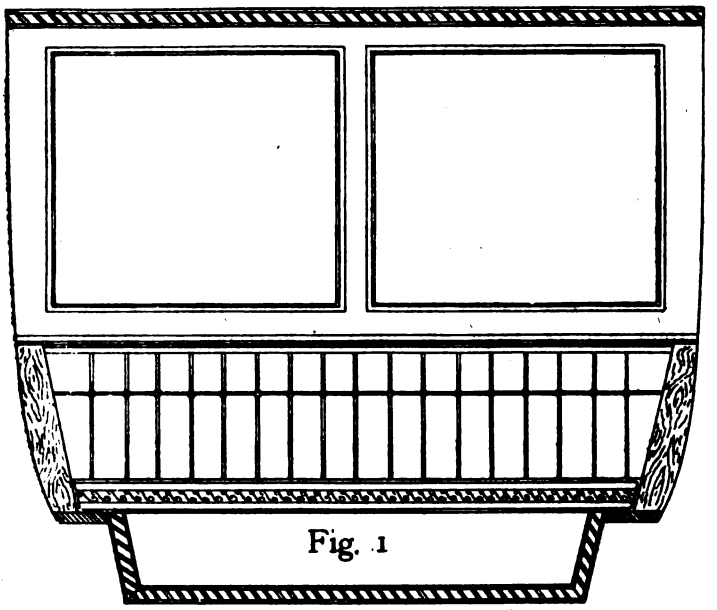


Fig. 1

holstering of a carriage cannot be for ever and aye in its oneness of design. And that in spite of the dislike to change from within the old trade, the new has forced its roots up into the light of betterment of form, and to a richer flora of art working, than was possible in the ground that had been plowed, reaped, gathered and gleaned to barrenness.

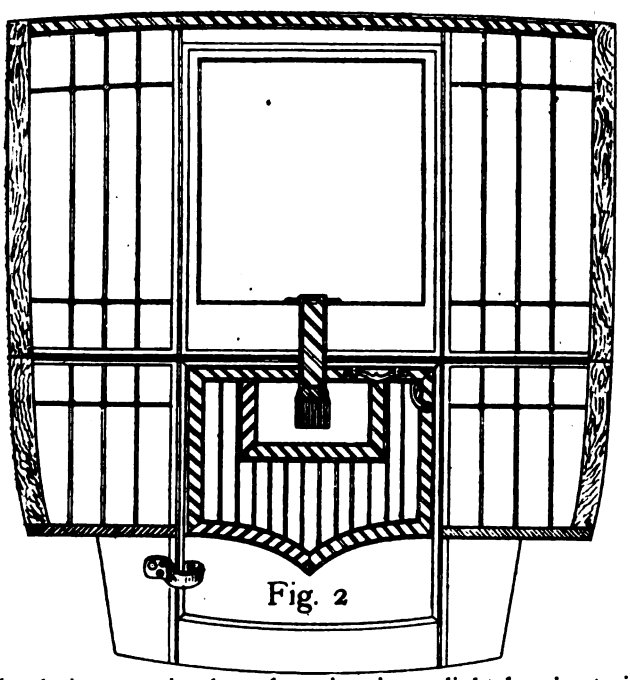


Fig. 2

The design we give here for trimming a light bus is straight pleated, a style imported from a fashion very popular in motor carriage upholstery.

Fig. 1 shows the inside of the body horizontally, with the back squabbing set out in ribbed pleats, and blocked off in squares on the top spacing. These are firmed into distinctive shape with horizontal pleating and corner-buttoned. The front edge of the cushion is shown in depth, but faced with broad lace. These cushions can now be made with conical spring fittings, the same as motor bodies are fitted with. In this special kind of carriage these seats are most applicable, and answer well. The fall is made with broad lace bordering, but it is not made too deep, but just sufficient to escape the heels. When these falls are made deeper than this, they take up dirt from contact with the feet, which is undesirable and looks bad.

The top part of the body round by the lights is done in plain cloth, and finished in securing and pasting lace, while around the roof edging a narrow broad lace makes a smart finishing, The lace should not be wider than 1½ inch. The surfacing is done in plain cloth, which is slightly stuffed to a fullness.

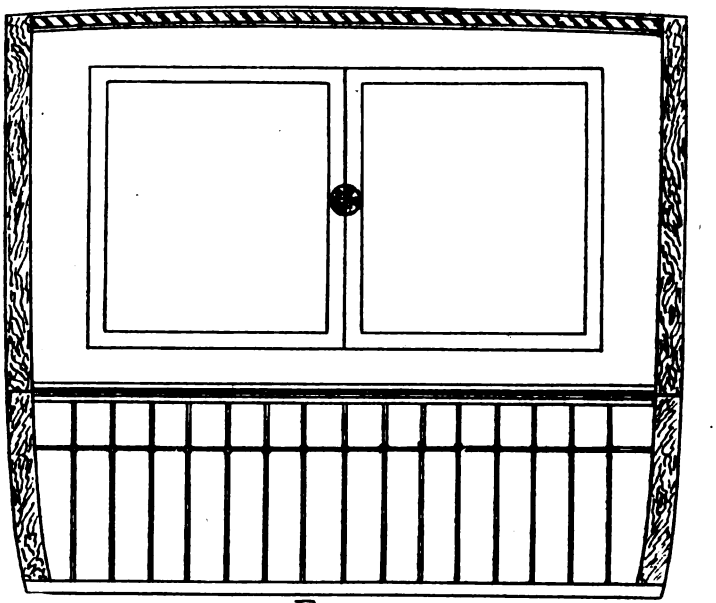


Fig 3

Fig. 2 illustrates design for the back quarters and the door—the top quarters are rib pleated and double blocked, and buttoned. The bottom quarters are fashioned to match the squabbing in Fig. 1.

The door squab is made with narrow pleated ribs, and margined with 1¾ inch broad lace. The pocket flap is made plain and finished in broad lace to match.

The waist rail of the head door, and the bottom of the body door are finished in plain cloth, and stuffed to a slightly round squabbing, while the glass string is made of 2¼ inch broad lace and lined in morocco.

Fig. 3 shows the front squabbing and the glass frames which are made to joint flush on the outside—a very much better plan

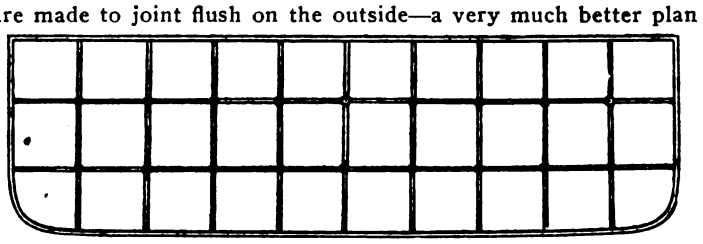


Fig. 4

than that of the outer and inner styles of the frames butting to each other and fixed with a thumb bolt screw. The glass frame fixing in Fig. 3 is on the principle of a head lock, the catch bolt working in a circular slot in the two half plates, thus binding the styles of the frames flush. The squabbing is, of course, made to match the body side squab, while the top quarterings are finished in plain cloth slightly stuffed and finished in its edging with pasting and seeming lace.

Fig. 4 shows the surface shape of the side cushion for the body, with its quarterings set out in blocks, so that for all practical purposes a trimmer has a design laid out for him to work to in our illustrations, and this is what ought to be done in every well equipped and up-to-date manufactory.

The squabbings round the body are lined off by the framing where the abutting squabs fill in to complete. The lines of the framing are grained up to make this quite clear.

Digitized by Google

IMPORTANT COLSOLIDATION.

Deere & Co. Acquire the Moline Wagon Co.—Reported To Be a $2,500,000 Deal.

The official announcement given below over the signature of President Rosenfield of the Moline Wagon Co., is the pith of the deal whereby the Deere & Co. corporation absorbs the wagon company.

"The Moline Wagon Company has been acquired by Deere & Company. Negotiations have been pending for some time, and a proposition tendered by Deere & Company has been accepted by the stockholders of this company.

"The new owners are our largest customers, purchasing about seventy-five per cent. of our annual output, and as such are the logical owners of this business.

"In this day of large undertakings, it is proper and advisable for large buyers to control the manufacturing plants, thus making economies in administration expense, etc.

"Because of the close business relations of the two companies, covering a period of over thirty years, the policies of both are, in essential features, identical. The success of these policies is evidenced by the combined growth of the plants, and under new management, there is every reason to believe the growth will be more rapid in the future."

The amount paid is not of record, but the guesses put it at $2,500,000.

President Rosenfield says that the Moline Wagon Company should this year manufacture 30,000 jobs. The capacity of the plant is one complete wagon every six minutes of operation, or 100 wagons a day. The plant as at present operated includes fifteen buildings designated by letter from A to O. The buildings are four and five stories in height. It is admirably equipped with switching facilities. The present force of employes numbers about 500.

The Moline Wagon Company was one of the pioneer manufactories of Moline, and the veteran resident who started it is still living. In 1854 James First established an anvil and forge in a small building at the foot of Nineteenth street, and from the business that he developed in the manufacture of farm wagons the inspiration of the organization of the Moline Wagon Co. came to Morris Rosenfield, who had been identified with his uncles in the leather business in Rock Island. A partnership under the name of Benser, Rosenfield & Co. was formed, Charles Benser having been taken into the concern. In 1872 the Moline Wagon Co. was organized with a capital of $100,000, and soon after the present site was first taken possession of. The stock was increased to $600,000 in January, 1884, and in the same year Mr. Benser died. Some years later the Rosenfield interest purchased the holdings of the Benser estate. The capital was further increased to $1,000,000 in February, 1907.

FROM MOTOR BUGGY TO MOTOR CAR.

Joliet, Ill., is to add to its industries an automobile concern. The Economy Motor Car Co., has for some time manufactured a "motor buggy." With the change of the company's name, from the Economy Motor Buggy Company to that of The Economy Motor Car Company came the report that the company was to enter the automobile field in the manufacture of the typical machine and abandon its production of the motor buggy.

CHANGE OF INTEREST.

The Jewel Manufacturing Co., of Chicago, whose line of polishes, enamels, cleaners, etc., for vehicle work is well known, has now the guiding force of Mr. H. C. Nelson in its executive department, as the gentleman has recently purchased the interest of the Albaugh-Dover Co., in the above concern. The business continues without other change than the change of financial interest noted.

CHANGES IN FREIGHT CLASSIFICATION.

Some of the recent changes in freight classification affecting the vehicle industry are appended. These changes occur in classification No. 34, effective since August, and others in classification No. 35, effective since January:

Item No. 14, page 192, Springs, carriage or wagon.
L. C. L. ..... R. 26
C. L. 5
Item No. 15, pace 192, Springs, Wagon and Seat.
L. C. L. ..... R. 26
C. L. 5
Item No. 12, page 199, Carts—pony, set up minimum weight 750 lbs. each, L. C. L. 1
Minimum weight 10,000 lbs, subject to R. 27, C. L. ..... R. 25
Item No. 5, page 206, Runners, Sleigh, attachments for wheeled vehicles
In bundles, L. C. L. 1
Minimum weight 20,000 lbs., subject to R. 27, C. L... R. 26
Item No. 27, page 206, Springs, Carriage or Wagon (not coiled.
L. C. L. ..... R. 26
C. L. 5
Item No. 28, page 206, Springs, Wagon and Seat (not coiled).
L. C. L. ..... R. 26
C. L. 5

SIGNIFICANT CHICAGO CHANGES.

One of the most important transactions in the southern Michigan avenue, Chicago business district, has been consummated in the sale of the property, 52½x160, between Twenty-third and Twenty-fourth streets, to James Cunningham, Son & Co., carriage manufacturers. George W. Costello, Chicago manager of the firm, took the title.

Officers of the carriage concern announced that the property will be improved at once with a four story mercantile building. When completed this structure will be occupied by sales and show rooms, which now are located on Wabash avenue, near Hubbard Court.

Coupled with the recent Studebaker and Kimball purchases, this move by the Cunningham company shows the increasing trend of firms within the loop district to less congested centers. It also indicates an intention on the part of carriage makers to follow the automobile dealers to south Michigan avenue.

A noteworthy feature of the sale is that the new owners preferred to pay cash and own their property rather than lease for a term of years, as many of the automobile firms have dnoe.

WANTS TO DOUBLE MEMBERSHIP.

In order to double its membership before the next meeting and increase its influence, the Southern Illinois Retail Vehicle and Implement Dealers' Association at the close of its annual meeting in East St. Louis changed its name. The organization is now the "Southern Illinois and Missouri Vehicle and Implement Dealers' Association."

The change of name became effective immediately, and the officers of the organization were instructed to launch a campaign to double the membership before the next meeting is held in January, 1911. President W. C. Mangold, of Anna, Ill.; Secretary Robert Seibert, of Belleville, Ill., and Vice-President Emil Hester, of Freeburg, Ill., were re-elected. The next meeting will be held in St. Louis.

TO BUILD AUTOS.

The Canton Buggy Company, Canton, O., D. L. Tsebantz, president and treasurer, will begin the manufacture of automobiles within a short time. The company will carry a full line of commercial and touring cars.

Digitized by Google

HORSE DRAWN VEHICLE A PRIME NECESSITY

Interesting Figures in a Review of the Carriage Building Industry in Cincinnati.

A review of the carriage building industry in Cincinnati for the year last past affords interesting reading. Those establishments which have continued exclusively in the manufacture of carriages or wagons for first class work report an increased business. In carriages and wagons the reports for 1909 show increases ranging from 5 to 45 per cent, with an average of about 25 per cent. During 1908 there was a loss of about $3,375,000 from the aggregate value of the output of 1907, bringing the total production of vehicles of all kinds in Cincinnati for 1908 down to $10,000,000. Estimating an increase for the year of 25 per cent, which is the ratio reported by a majority of the manufacturers, the total output for 1909 will be $12,500,000, which is still $1,000,000 below the figures for 1907. This is for horse-drawn vehicles.

It is impossible to make a satisfactory comparison of the two years in the line of automobile construction. Some factories have been engaged in the construction of automobile parts or fittings for the full year; others have but recently taken up the work, but an estimate from a manufacturer most interested is that the total value of the output for 1909 is not less than $2,000,000. Most of the construction has been confined to trucks and delivery wagons and automobile parts, without much attempt to enter competition at this time with the builders of limousines, etc. However, a few builders are building automobiles for family use, and this year will mark much advance in this line.

Adding the value of automobiles to the value of other vehicles built in Cincinnati in 1909 and the total production is not far from $14,500,000, which compares with $10,000,000 in 1908 and $13,500,000 in 1907.

During the year, which the trade considers to have ended October 1, the Sechler Company added to its factory building, increasing their capacity 3 per cent.

A. G. Brunsman, president of the Anchor Buggy Company, says the indications for 1910 are flattering and the promise is that the demand for horse drawn vehicles will be equal to the best demand of former years.

Otto Armleder, president of the O. Armleder Company, says that all manufacturers, including supply men who furnish particular parts of vehicles, and by which the value of the production in the whole country is measured to a great extent, all report an increasing business, and the promise for a large advance in 1910 over 1909.

NEW WHEEL COMPANY.

The Franklin (O.) Wheel Co. has begun work in its new plant under the direction of Mr. Weisner, a manufacturer of marked ability and experience. He will be assisted by the following men, all of whom have moved to Franklin to accept responsible positions at the heads of the various departments: Thomas P. Walls, of St. Louis; A. O. Wise, of Joliet, Ill.; Frank Pilcher, of Miamisburg; Frank Vance, of St. Louis; Jesse L. Cauffman, of Delphos, O.; J. J. Hickey, of Joliet, Ill., and H. P. Spencer, of Miamisburg.

TO BUILD AUTO TOPS ON LARGE SCALE.

The Goshen (Ind.) Buggy Top Company has added an equipment and machinery for an automobile top department. The company for the past several years has manufactured auto tops as a side line on a small scale, but is now prepared to take care of this branch of the industry on a large scale. Jacob Wayer, manager of the company, states that the demand for auto tops has become so large that it was absolutely necessary for them to install the addition.

A NEW CANDIDATE FOR VEHICLE HONORS.

It is now more than fifty years since the carriage trade had its first exponent in America. For many years the pages of the exponents were confined solely and absolutely to vehicles which came under the head of carriages, the list of which is too long to undertake to relate at present writing. The early issues were not strictly prepared to spread a technical education to those who delved either as artizans, proprietors of factories or salesmen engaged therein. It was not until the establishment of The Hub, which absorbed the original Hub and The New York Coach Maker's Magazine that real, practical and technical matters assumed the educational form. Slowly but surely much of the material before used gave way to practical matter. Other journals than The Hub were apt copyists and took up the cue, and all have held to such matters continuously.

As above stated, the carriage was "The Only." Anything else was an innovation and not to be considered. To place anything relative to a commercial vehicle before the chief engineer of the book was equal to asking for a death warrant. Suggestions to take up the commercal vehicle were absolutely ignored. The "ice was broken" by suggesting the use of T, H and angle iron for certain parts of vehicles. Then the writer made an appeal for the commercial and all horse drawn vehicles, setting forth the advantages of the same to the journal, to the builders of the vehicles and the men engaged in their construction. It was a signal victory. Vehicle journalism forged ahead as an exponent, educator and general introductor.

When the automobile poked in (at that time) its ungainly proportions, everybody held aloof but The Hub. The writer was the first to plant a good word for it. The chapter was copied at home and abroad. The obliquey and distaste for the auto melted away. Our vehicle journals are to-day pleased to accept in plain cover what they were then loth to accept sugar coated with gilt spots.

To-day the writer is again impelled to try and open the pages in a new departure which will bear a brief preface.

Thirty years ago, except in special cases, the farmer depended on his plow and harrow and other one or two horse machines to do the work of preparing the soil for seeding or planting purposes. To talk of machines meant a threat to ostracise. Eventually the horse-drawn vehicle with plows came to stay, so did the harrow and many other implements.

For years "the cry from Dan to Beersheba" has been contnuously Good Roads! Better! Better!! Better Roads!!! And yet, all the work on the roads was done with the ordinary one or two horse plow, the hoe, rake and shovel. When done, the crown was usually flat. Ditches for draining were left out. To-day sees them as they were 50 years ago. The roadmaster was neither a civil engineer nor expert road builder. How then could he be expected to build good roads?

"Go west, young man, go west!" was the ever ready suggestion of the late Horace Greeley. He did go west and took with him his energy, his inventive genius and his disposition and ability to work and help improve Uncle Sam's domain. He sends to the orient of America some novelties in the way of road builders, one horse, two horse, three horse, four horse, vehicles, built expressly for making good and better roads. Not only better roads but the same machines or vehicles are so constructed that the sidewalks and streets of our northern villages and towns are quickly cleaned of the heaviest falls of snow.

It would be pleasant to make mention of all, did time and space permit. We will present one of the most economical and efficient at present, and look after the others later. The Twentieth Century Grader is a little giant. It has two wheels and requires two horses. It crowns the road to perfection and produces the desired grade. It digs a ditch of any width desired on each side of the road and clears it of all noxious and poisonous weeds and drives out the poisonous, dangerous reptile. When the snow comes, no matter whether in town, village or in the open road, one machine, one man and two horses will

Digitized by Google

clean more sidewalks, crossings and streets in one day than would a regiment of laborers with the ordinary shovel.

These vehicles are a necessity. They belong to the trade. The vehicle maker must repair them and may be compelled to make them. Therefore, I repeat, it is our incumbent and bounden duty to accept the new vehicle, place them on our lists, and reap the general mutual profit and all else which follows in consequence.

J. L. H. MOSIER.

New York, January, 1910.

CUNNINGHAMS ABSORB BROWNELL BUSINESS

The George L. Brownell carriage business, of New Bedford, Mass., one of the oldest in New England making hearses, ambulances and coaches, has been acquired by James Cunningham, Son & Co., of Rochester, N. Y., as the result of a merger which has been consummated.

Under the new arrangement the Brownell family retires from any interest in the business and retains the real estate and factory buildings. The business will continue under the supervision and management of William C. Barker, who has been superintendent and manager since the death of Mr. Brownell in 1903. No permanent plans are announced by the Cunningham Company, but for the present the factory will be continued, as the books are filled with orders for delivery during the spring. In addition to hearse and ambulance work, the business includes automobile features.

The business was established by the late George L. Brownell in 1843, and the factory had a reputation throughout New England and in New York city for its hearse and ambulance work.

RETIRES WITH RANK OF COLONEL.

We learn from Boston that Lieut. Col. Edwin W. M. Bailey, attached to the inspector-general's department, was retired with the rank of colonel. The colonel has quite a militia record, being as good a soldier as he is a carriage builder. He is one of the best known officers in the M. V. M. He was commissioned captain of B company in 1887, was made a major in the regiment in 1893 and lieutenant-colonel in 1896. The same year he was appointed an assistant inspector-general on the Governor's staff, with the rank of lieutenant-colonel. He served with the Eighth Infantry during a part of its Spanish War service, from May 11 to October 28, 1898.

SUCCEEDS C. E. BROWN, DECEASED.

At a special meeting of the directors of the Union Carriage & Gear Co., Watertown, N. Y., I. A. Kellogg, formerly assistant secretary and treasurer of the company, was elected to the office of secretary and treasurer, made vacant by the death of Charles E. Brown. Mr. Kellogg will also take Mr. Brown's position as a member of the executive committee. The officers of the company are W. W. Conde, president; C. H. Hyde, vice-president; and I. A. Kellogg, secretary and treasurer.

BUSINESS PERSONALS.

A. T. Quisenberry, who has been vice-president and manager of the Springfield (Mo.) wagon factory for several years, purchased a half interest in the firm of H. W. Diggins & Company, insurance agents.

Frank C. Smth, of Columbus, Ohio, a former carriage salesman, has returned to the old vocation. He is now traveling salesman for Durant-Dort Carriage Co.

H. F. Powitzky, president of the Powitzky & Collins Carriage Wood Work Company, St. Louis, Mo., celebrated his fifty-fifth birthday recently. He has been in active management of the firm since its establishment about thirty years ago.

AMONG THE ASSOCIATIONS.

The Omaha (Neb.) Implement and Vehicle Club elected E. A. Hatfield president, B. L. Rees and R. F. Smith, vice-presidents, C. C. Troxell, treasurer and F. W. Squires secretary.

At the monthly dinner of the Implement, Vehicle and Hardware Club at Peoria, Ill., the annual election of officers was held. The dinner was the most largely attended in the history of the organization. The following officers were elected: President, W. C. Collins, of the Keystone Steel Wire and Fence Co.; W. A. Ireland, of the E. G. Isch Co., first vice-president; T. C. Roberts, of the Avery Company, second vice-president; Warren Kinsey, of the Kinsey & Mahler Co., treasurer, and J. I. Black, formerly with the Herschel Co., secretary. Executve committee, M. M. Baker, C. A. Pattison, L. R. Metherwell, G. G. Luthy and C. S. Hughes.

The Implement, Vehicle and Hardware Association of St. Louis held its annual election at the Missouri Athletic Club. After the election of officers many of the forty members left for Kansas City to attend the State convention. A. T. Stevens, treasurer and assistant manager of the John Deere Plow Company, was elected president; John V. Flesh, first vice-president; Joseph Schlecht, second vice-president; George N. Ogan, third vice-president; Oscar H. Cook, fourth vice-president; Carl Hirdler, fifth vice-president. George M. Hoffman was made treasurer for his fifth term, as was W. C. Howland for secretary.

The Carriage Workers (trade organization) held its convention in Washington in January.

SLEIGH WITH WHEELS.

Any person who has been sleighing up to the eleventh hour and got caught miles from home after the snow had melted, will appreciate the invention of a Minnesota man here described. This invention is nothing less than a wheel attachment for sleighs which enables the driver to get home without difficulty, even if the snow is all gone. Two pairs of wheels are attached to the body of the sleigh, with the front and rear crank axles mounted on pivots. A bar running through the two axles is adjustably connected to the rear supports of the sleigh body. A strong spring keeps the wheels clear of the ground when they are not in use, but when needed they are let down, and the connecting bar locked so that the sleigh rests on the wheels and the runners are several inches above the ground. It takes only a few minutes to make the change, and the vehicle may be used comfortably in places where the conditions of the road vary.

WANT CORPORATION TAX REPEALED.

Two hundred and fifty delegates, representing sixty important commercial and industrial organizations, gathered at the Congress Hotel in Chicago to take action toward the repeal of the publicity feature of the new corporation tax law. The meeting was held under the auspices of the Illinois Manufacturers' Association. Its president, Laverne W. Noyes, and its secretary John M. Glenn, have, through circular letters, expressed the opinion that the publicity clause was inserted for political purposes. It has also been openly charged, to discriminate, in that it gives a distinct advantage to partnership concerns over corporations.

RACINE-SATTLEY CO. WILL BUILD AUTOS.

The Racine-Sattley Company, of Racine, Wis., manufacturers of wagons and buggies, will engage in the manufacture of automobiles. The company will manufacture its own bodies while the motors will be manufactured by the Holbrook-Armstrong Company, having buildings adjoining. It is the intention to have the new automobiles on the market early in the spring.

Digitized by Google

HOW TO AVOID THE SELDEN PATENT.

Diplomats of Licensed Association Point the Way for Budding Manufacturers—Cars That Do Not Infringe.

Carriage makers who have been affected by the trend of the times and who feel an itching to take up the manufacture of automobiles have discovered an alternative course which provides a way out of the difficulties which confront them in regard to getting a Selden license for the making of gasoline, says The Motor World.

In addition to the great number who already have undertaken to make gasoline cars in some quantity, there are many more who still are in the purely experimental stage, having made perhaps one or two cars, but equally numerous are those concerns which have not as yet made a car of any kind, but which have been considering the possibilities of building gasoline vehicles. From all three classes there have come in the last few weeks a flood of applications for licenses, and the Association of Licensed Automobile Manufacturers has been obliged to advise them that their chances are exceedingly slim, inasmuch as the Association's policy as now determined upon is to grant licenses only to such concerns as actually have been making cars for a considerable period.

That their case is not hopeless, however, so far as concerns the manufacture of automobiles is made plain by the fact that not a few of them have turned to electric vehicles as a solution for their problem, this being a field which is not controlled by any "basic patent" situation. In diverting the mind of the carriage maker to the electric as the type he should espouse for his automobile making ambitions, the arguments pesented are alluring in the extreme, and give rise to some surprise as to why more carriage makers have not been already attracted to the electric vehicle rather than gasoline.

It is pointed out that while it now is possible to get ready made gasoline motors, gear boxes, and other parts, a great measure of designing skill and experience is necessary to make an assembly of these that will result in a satisfactory car, and that even the assembling alone entails a degree of expense and an amount of factory equipment which requires a heavy investment. On the other hand the assembly of electric vehicles is comparatively simple, in that the intending manufacturer is given every technical assistance by the manufacturers of electric motors and batteries as to the equipment that should be used for each type and kind of vehicle. All the necessary parts of the power plant and controlling system are readily available, and, what is more, can be obtained with a degree of promptness which is almost impossible in the gasoline field. While a few important questions of design are involved in the selection of a system of transmitting the power from the motors to the rear wheels, they by no means present the engineering problems of a gasoline car.

With an organization of agents who are in touch with the better class of retail carriage trade, the carriage maker's chances of disposing of electric pleasure vehicles are repesented as being quite as good as with gasoline machines, especially since women are getting to look upon the electric with growing favor. Every opportunity is presented in the designing of new and improved bodies, so that the carriage maker's body building abilities and capacity are apt to be given all the test he may desire.

Many of the experimenters have been dissuaded from beginning quantity production in the gasoline field, but are taking up the electric instead. The likelihood of the electric receiving considerable impetus from the carriage making ranks is further increased by the fact that the virtues of the electric as a manufacturing proposition are being pointed to in the case of those who have not as yet taken up either type but who have expressed the intention of becoming automobile builders if possible.

The Anchor Motor Car Co. has been incorporated at Cincinnati, Ohio, with a capital stock of $50,000.

THE ART OF "SALTING" OAK.

The American public at large is familiiar with the phrase and the practice of salting a mine. This method of deception practiced upon the "tenderfoot" was and still is a favorite one with a promoter who wishes to get good money for a worthless mine.

The reader will not have to entirely revise his conception of salting mines to understand the term "salting" as applied to oak, says Wood Craft. When common oak three inches or more in thickness is piled with strips a rapid shrinkage is liable to take place which will form deep cracks along the silver or medullary rays. Rains and other conditions introduce dust and dirt into these cracks, thus seriously injuring the stock. The lumberman soon finds that he has a worthless pile of lumber on hand. The cracks from the opposite side will often pass each other so that if the material is resawed the boards will literally fall to pieces.

To get the lumber in condition so that someone will buy it the unscrupulous lumber dealer sometimes resorts to salting. This is accomplished by taking down the lumber pile, removing the strips and sprinkling fine salt over the surfaces of the stock. The lumber is then repiled without strips. The salt being slightdeliquescent, draws sufficient moisture to cause surface swelling, which closes the cracks on the outside of the lumber, making it appear firm. The presence of the salt prevents the funge growth which causes dry-rot, and thus makes it possible to leave the stock piled solid for some time.

Even an expert dealer in lumber may be completely deceived by the surface appearance of lumber which has been treated in this way. The only way to detect it is the rule employed for detecting a bad egg, that is, look to the inside, which necessitates the sawing of some of the pieces in two in the middle and planing or smoothing of the exposed surface. Simply sawing with the hand saw may not be enough. The rough surface exposed may not show the conditions plainly enough to be detected.

We know of one case in which from 15,000 feet of 3 inch oak which had been salted only 1,000 feet could be used. The rest was good for absolutely nothing but firewood. That is what it was used for; though the buyer paid $85 per thousand for the material, which was claimed to have been air-seasoned for five years.

CONVENTIONS.

North Dakota and Northwestern Minnesota.—North Dakota and Northwestern Minnesota Implement Dealers' Association at Grand Forks, N. D., Feb. 1, 2 and 3, 1910.

There are a number of important meetings of vehicle and implement dealers scheduled to be held during the year. The most noteworthy we append:

Oklahoma.—Oklahoma Retail Dealers' Hardware and Implement Dealers' Association, at Oklahoma City, Feb. 8, 9 and 10, 1910.

Texas.—Retail Dealers' Hardware and Implement Association of Texas, at Dallas, Feb, 15, 16 and 17.

Colorado.—Colorado Retail Implement Dealers' Association, at Denver, March 8, 9 and 10, 1910.

SLEIGHS FEW AND IN DEMAND.

In Michigan it has been a banner season for everything on runners. Factories are apparently buried with orders and local dealers find that telegrams and other jolts are a waste of time, because the factories do not seem to have the stock sufficient to handle hurry-up orders. Many local merchants are using "runners," therefore, when they would prefer to use sleighs.

Local vehicle dealers have lost considerable business on account of their inability to secure stocks of sleights and cutters. The sleighing never was better and it's no going with wagons.

Digitized by Google

OBITUARY

James McCormick.

James McCormick, aged 85, died at East Liverpool, Ohio. He was born in Beaver, Pa., and learned the trade of wagon maker. Two brothers survive.

Thomas Schuler.

Thomas Schuler, 46 years old, a wheelmaker, shot and killed himself in Harvey, Ill., December 27. He is believed to have committed suicide while temporarily deranged.

Robert McKay.

Robert McKay, aged 57 years, president of the McKay Carriage Company, of Grove City, Pa., died January 25, from injuries received in an accident at the carriage works. He was a prominent Mason. His wife, two sons and a daughter survive.

William J. Collins.

William J. Collins, after a lingering illness, died at his home in Berlin, Md., in the thirty-eighth year of his age. Mr. Collins up to two years ago was engaged in the carriage and wheelwright business, but retired when his health failed. He leaves a wife and a son.

John G. Rappold.

John George Rappold, a retired carriage builder of Brooklyn, died on January 27, at his residence, No. 428 Gold Street. He was in business for many years in the Fifth Ward, near the river front. He was born in Germany, August 23, 1840. He leaves his widow, a son, and three daughters.

E. M. Miller.

Mr. E. M. Miller died at his home in Quincy, Ill., in January, in the seventy-third year of his age. Few men in the carriage building industry were better or more widely known than Mr. Miller. The omnibus and other vehicles of his make were nationally well known. He was one of the old-time, sterling builders, who are gradually leaving us.

Walter Miles Putnam.

Mr. Putnam died at the home of his daughter, Mrs. C. L. Sage, in Freeport, Ill., his home, January 17. The cause was paralysis. Walter Miles Putnam was born in Rahway, N. J., December 1, 1837, and in 1861 settled in Freeport. He was a carriage maker. The greater part of his activities was devoted to the work on carriage and buggy bodies at the Henney Buggy Company.

Osgood Morrill.

Osgood Merrill passed away suddenly at Danvers, Mass., January 23. Mr. Morrill was formerly one of the most prominent carriage manufacturers of the town and was a citizen deeply interested in many sides of the community's life. He was a native of Salisbury (Amesbury) and was a lifelong resident. He is survived by a wife and one daughter.

Henry B. Bartol.

Henry B. Bartol, 92 years old, a retired carriage manufacturer, died suddenly at his home, 1611 East North Avenue, Baltimore, Md. He was sitting in his favorite chair talking with his niece when he was seized with a weak spell, and before a doctor could be summoned had died. He had been in poor health for some time. He was born in Baltimore. He conducted a carriage factory on Calvert street until about fifteen years ago. He was unmarried.

Horace Wilmot.

Horace Wilmot, aged 60, secretary and treasurer of the White Manufacturing Co., of Bridgeport, Conn., died at his home in that city after an illness of five weeks, from stomach trouble. Mr. Wilmot was born in Charleston, S. C., but in boyhood removed to Bridgeport with his father. For many years he was secretary and treasurer of the Ornamental Wood Co., and until the business was disposed of, and about thirty years ago he entered the service of the White Manufacturing Co., and was secretary at the time of his death. He is survived by his widow and one daughter, Miss Margaret Wilmot, and a brother, Walter S. Wilmot, secretary of the Bridgeport Hydraulic Co.

Charles E. Brown.

Charles E. Brown, for the past twenty years secretary and treasurer of the Union Carriage and Gear Company, of Watertown, N. Y., died suddenly about midnight, Saturday, January 22, of heart trouble.

Mr. Brown was prominent among the business men of Northern New York and for the past twenty-five years or more had been connected with many business enterprises throughout that section. He was best known through his connection with the Union Carriage and Gear Company, as he had been its active head since taking the office of secretary and treasurer. Mr. Brown was born in Champion 61 years ago.

Samuel Toomey.

After an illness of brief duration, Mr. Toomey died at his home in Canal Dover, Ohio, January 17. Mr. Toomey leaves a wife, four sons and two daughters.

Since about fifteen years Mr. Toomey has been on the retired list, his son, Mr. Oliver Toomey conducting the business established by his father.

It was due to Mr. Toomey's talent and inventive genius that the sulky was lifted from the level of a common vehicle and made a distinctive product of world-wide reputation. The truss or arched axle was the backbone of his invention. The Toomey sulky was a creation, and vehicle builders honored the talent of the man who conceived and produced it.

Mr. Toomey had been identified with the industry since 1854. He was the founder of the firm of S. Toomey & Co., and the Canal Dover shop was known here and abroad wherever harness racing was in vogue.

George Seislove.

George Seislove, of Bethlehem, Pa., a former manufacturer of that city, died after suffering two years with a complication of diseases.

Mr. Seislove was born at Shimersville, August 3, 1850, and was in the sixtieth year of his age. The deceased learned coach painting with the firm of Jordan Bros. at Coopersburg. Subsequently he moved to Allentown and formed the carriage building firm of Gackenbach & Seislove. The firm sold out the business in 1884 and Mr. Seislove purchased the bending works of Becker Bros. He conducted this business for several years and on disposing of it retired for a time from active pursuits.

He was married twice. His second wife survives with one son by the first union.

WILL MOVE TO TERRE HAUTE.

The Wabash (Ind.) Mfg. Co. which is to move its wagon and sled factory to Terre Haute, Ind., under a guaranty of a subsidy by the Commercial Club of that place, will not move as soon as planned. It is the expectation now to begin loading the machinery about April 1.

A PROSPEROUS YEAR.

At the annual meeting of the Columbus (O.) Buggy Company all of the old officers were re-elected. The reports show the company has ended a prosperous year and that the regular dividends on both the common and preferred stocks had been paid with a good surplus over. The outlook for the coming year was said to be excellent, especially in the automobile departments, both gasoline and electric.

WORKING FULL TIME.

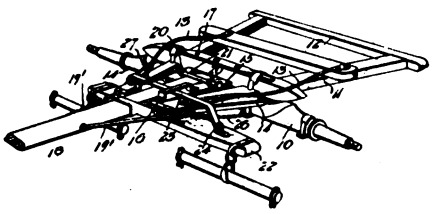
The York Wagon Gear Company, York, Pa., is busy and employes are working on full time with a full quota in every department. The present shipments surpass those of any previous year.

Digitized by Google

Recently Granted Carriage Patents

Running Gear for Wagons. Charles M. Haeske, South Bend, Ind. No. 943,742. Patented December 21, 1909.

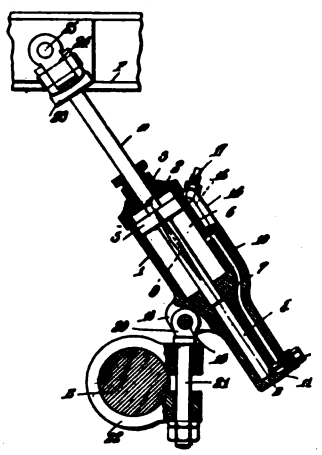
The combination with the hounds and axle of a wagon, of supplemental hounds comprising spaced strips arranged between the forward continuous ends of the hounds and secured thereto with the rear ends secured to the axle, a pole fitted between the parallel inner faces of the supplemental hounds, means passed transversely through the hounds and the supplemental hounds, and through the pole, forwardly and rearwardly extending braces having overlapped ends secured by bolt, a bolt extended over the rear end of the tongue and having its ends secured to the supplemental hounds, a doubletree, a yoke bar



having its ends rotatably mounted upon the doubletree, whereby the latter may have a rocking movement, the yoke bar extending over the hounds and the supplemental hounds, and keepers on the supplemental hounds beneath which the yoke bar is free to slide lengthwise of the tongue.

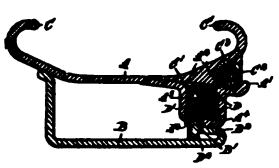
Shock-Absorber for Automobiles and the Like. Robert B. Ewart, New York, N. Y., assignor of one-half to Benjamin A. Seitz, Kansas City, Mo. No. 943,774. Patented December 21, 1909.

A shock absorber comprising a fluid containing casing having main and auxiliary compartments, connected reciprocatory elements in the respective compartments, means for permitting



displacement of the fluid from one compartment to the other, means for permitting displacement of the fluid from one end to the other of the main compartment, and separate fluid-controlling devices carried by said means.

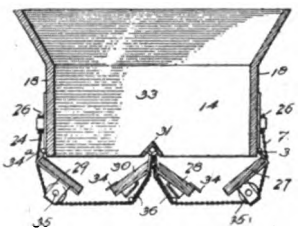
Detachable Rim for Vehicle Wheels. Philip G. Challiss, Forest Hill, England. No. 943,811. Patented December 21, 1909.



An attachment for vehicle wheels comprising an annular member adapted to be applied to a wheel-felly and having opposed tire-retaining flanges, the annular member also having a lateral annular groove and a locking ring arranged in the annular groove and provided with latches adapted to have a locking action or engagement with felly-member.

Dump Wagon. Charles M. Haeske, South Bend, Ind. No. 943,743. Patented December 21, 1909.

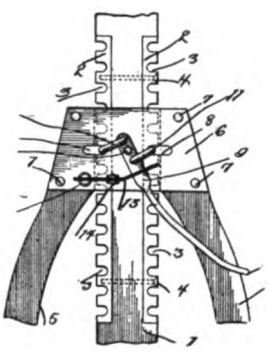
A dumping body for wagons provided with hinged bottom sections, closing means for all sections, means carried by one



of each pair of sections for covering the joint between them, means for causing the last named sections to assume their closed position slightly in advance of the other sections, the same comprising an angular leafspring on the first-closing sections over which the closing means passes.

Wagon-Reach Coupling. Curt Myers, Springport, Mich. No. 944,143. Patented December 21, 1909.

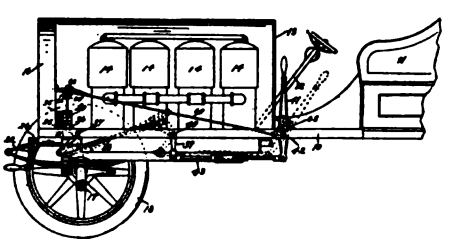
A wagon reach coupler comprising serrated plates connected to the opposite sides of the reach, plates connected to opposite



sides of the hounds, a lever pivoted to the plates and carrying upon opposite sides of its pivot links to engage the notches in the serrated plates, and means for holding the lever in adjusted position.

Gas Engine Starter. George Buress, Indianapolis, Ind., assignor of one-half to Robert W. Long, Indianapolis, Ind. No. 944,315. Patented December 28, 1909.

In combination with the shaft of an explosive engine, of a gear secured thereon, oscillatory means pivoted away from the gear and its axis, a curved bar pivoted at one end to oscillatory



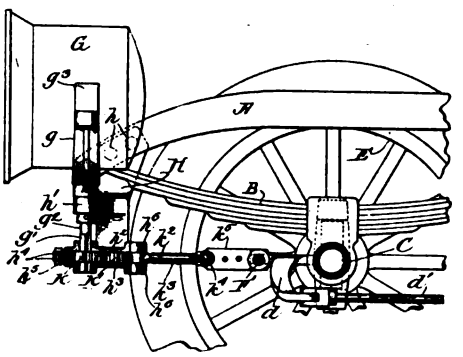
means and extending beside the gear, and an adjustable pawl on the other end of bar for engaging the teeth at one side of the gear during the movement of the bar, whereby the gear will be actuated to start the engine.

Swivel Lamp for Vehicles. James E. Geary, Quincy, Mass. No. 945,122. Patented January 4, 1910.

In combination, a vehicle having wheels mounted on journals

Digitized by Google

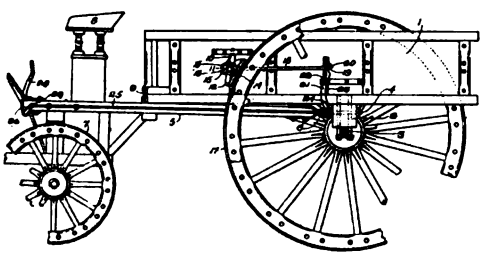
pivoted to turn with relation to the vehicle body, a steering rod movable transversely of the vehicle, body connected with the pivoted wheel journals, a swivel lamp carried by a post, the post being pivotally mounted on the vehicle in a substantially vertical axis, a gear segment fast to post, a second gear segment in mesh with the first gear segment, an extensible tele-



scoping lever secured to second gear segment, and a lever actuating arm secured to steering rod and movable therewith, the extensible lever and arm being connected by a universal joint.

Vehicle. John Johnston, Hyde Park, Mass., assignor to J. Johnston Company, Hyde Park, Mass., a corporation of Massachusetts. No. 945,169. Patented January 4, 1910.

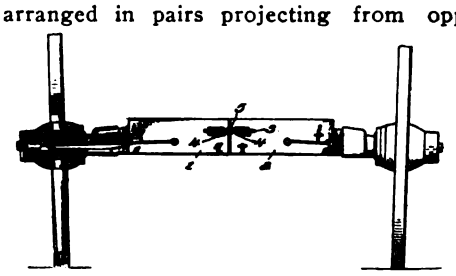
A vehicle comprising a tilting body; a brake shoe mounted on the body with provision for movement into and out of engagement with one of the wheels of the vehicle; means on the



body for shifting the shoe into and out of engagement with the wheel; a frame with relation to which the body swings when it is tilted; a removable connection between the frame and body to normally hold the latter against tilting, and means on frame for operating the shifting means.

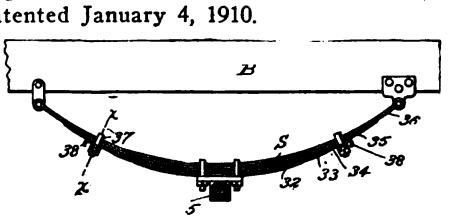
Device for Laying Off Wooden Axles. George W. Golding, Lodi, N. Y. No. 945,515. Patented January 4, 1910.

A vehicle axle templet comprising a main templet body, templet arms arranged in pairs projecting from opposite ends



thereof and having a jointed connection with the body, a runner having a sliding engagement with each pair of templet arms, and means for shifting the runner lengthwise of said arms.

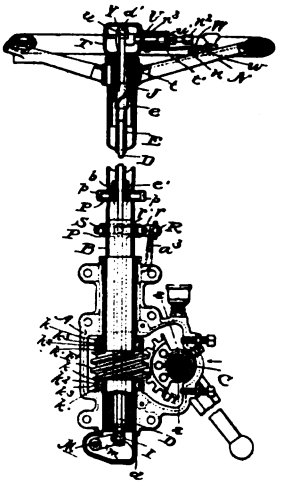
Vehicle Spring. Charles A. Lieb, New York, N. Y. No. 945,725. Patented January 4, 1910.



In combination with a vehicle spring comprising a plurality of leaves, a compensating clamp for holding said leaves in yielding frictional contact regardless of the direction of strain on the spring. In a device of the character described, in combination with a vehicle leaf spring, adjustable yielding means on the spring tending to increase the friction of the leaves against each other to increase the resistance of spring against movement of the vehicle body.

Steering and Motor-Controlling Mechanism for Automobiles. Charles Schmidt, Cleveland, Ohio, assignor to the Peerless Motor Car Company. No. 946,465. Patented January 4, 1910.

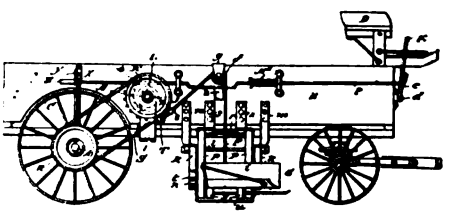
The combination of a rotatable hollow steering column, a rotatable member mounted upon and projecting into the upper end of the column and having threaded portion within the column, means preventing the endwise movement of the member, a tube longtudinally movable in the steering column and



having a threaded portion with which the threaded part of the member engages, a reciprocatory rod passing axially through the member and through tube, means mounted upon the member for moving rod endwise, a handle secured to member for turning it, and mechanisms respectively operated by the endwise movement of the tube and rod.

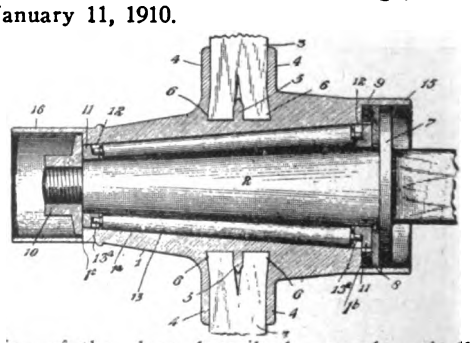
Self-Loading Wagon. George M. Forbes, Longmont, Colo., No. 946,028. Patented January 11, 1910.

The combination of a wheeled vehicle having a body, a combined receptacle and elevator comprising a basket, inwardly ex-



tending arms on the basket, bars pivotally connected with the body and the basket, a loop fixed to bars and having a portion disposed under the basket arms, a connection intermediate a wheel of the vehicle and the bars of the combined receptacle and elevator, adapted to raise the latter and also adapted to be interrupted, and controlling means for interrupting connection.

Roller Bearing Axle. Martin Wille, Chicago, Ill. No. 946,182. Patented January 11, 1910.



In a device of the class described, an axle spindle having a collar at one end and a nut threaded upon the other end in com-

Digitized by Google

bination with a hub having a bore of greater diameter than that of the spindle, a roller bearing cage mounted on spindle, rollers in cage forming a bearing between the spindle and hub, the hub being provided wtih internal outwardly faced shoulders near each end, one of the shoulders bearing against nut, a metallic washer and soft packing interposed between collar and the opposite shoulder, the soft packing surrounding the inner end of cage and the washer and nut bearing against the respective ends of cage.

RECENTLY GRANTED PATENTS OF INTEREST TO VEHICLE INDUSTRY.

938,120—Quick-releasing Whiffletree. E. A. Carkin, Medford, assignor to H. B. Mitchell, Malden Mass.
937,924—Locking Device for Axle-nuts. T. W. Caudle, Dayton, Tenn.
938,220—Hub Fastener. T. J. Cupstid, Swansea, S. C.
937,787—Tire Construction. G. E. Garon, Manchester, N. H.
938,230—Wear-strip for Cart and Wagon Bodies. J. T. Hamilton, Council Bluffs, Iowa.
937,798—Vehicle Wheel. E. Hartman, Brownsville, Texas.
937,936—Axle Skein. E. D. Hassenplug, Greenville, Pa.
937,808—Vehicle Wheel. E. Hopkinson, East Orange, N. J.
937,940—Vehicle Reach. M. R. Hull, assignor to Rex Buggy Company, Connersville, Ind.
938,241—Wagon Brake. E. A. Johnson, Lovell, Okla.
937,999—Runner for Wagons. F. Kindahl, Cambridge, Mass.
938,012—Dumping Vehicle. C. Miller, Denver, Col.
937,953—School Wagon. T. H. Parry and W. J. Byers, assignors to Parry Manufacturing Company, Indianapolis, Ind.
937,859—Motor Vehicle. H. Pieper, Liege, Belgium.
937,969—Wheel. E. Stewart, Kansas City, Mo.
937,973—Wheel. G. H. Treadgold, Port Huron, Michigan.
938,184—Vehicle Wheel. W. D. Trigalet, Mamaroneck, N. Y.
937,895—Draft Equalizer. J. Van Matre, Paso Robles, Cal.
937,975—Draft Equalizer. J. Van Matre, Paso Robles, Cal.
937,900—Draft Equalizer. L. E. Ward, Lake City, Ill.
927,910—Vehicle Wheel. L. M. Wolffsohn, assignor to J. Wolffsohn, New York, N. Y.
938,196—Running Gear. C. O. Wyman, Anoka, Minn.
938,198—Dump Cart. L. H. Young and A. Young, assignors of one-fourth to A. A. Schuller, Hagerstown, Md.
938,810—Wagon Brake. J. Auth and H. Kettler, Covington, Kentucky.
938,637—Draft Equalizer. A. V. Burke, Greeley Center, Neb.
938,990—Detachable Spur for Vehicle Wheels. E. E. Eastwood, Piper City, Ill.
938,834—Cushion Wheel. A. Ellis, Augusta, Ga.
938,999—Vehicle Tire. C. F. Fisk, Allentown, N. J.
939,002—Doubletree. G. M. Frink, Arcadia, Cal.
939,130—Dumping Wagon. H. L. Hazen, Edgewater, N. J.
938,679—Vehicle Speed Apparatus. E. C. Marble, Chicago, Ill.
938,496—Ambulance. C. Mestrovich, assignor to N. M. Matosin, Portland Oregon.
938,782—Running Gear for Vehicles. I. E. Palmer, Middletown, Conn.
938,783—Trackless Power Driven Vehicle. I. E. Palmer, Middletown, Conn.
938,784—Running Gear for Vehicles. I. E. Palmer, Middletown, Conn.
938,796—Vehicle Wheel. T. F. Scott, Everett, Mass.
938,720—Vehicle Brake. G. Stables, Philadelphia, Pa.
938,524—Whiffletree Clevis Hook. W. S. Thomson, assignor to H. D. Smith and Company, Plantsville, Conn.
939,113—Wagon Jack. R. C. Tucker, Lamont, Michigan.
939,114—Wagon Body. H. Wachter, Clinton, Mo.
938,804—Hub-attaching Device. I. S. West, Difficult, Tenn.
939,116—Driving Gear for Automobiles. E. G. Whitacre, Wellsville, Ohio.
939,180—Steering Gear for Vehicles. J. A. Wilson, Jr., assignor to Noye Manufacturing Co., Buffalo, N. Y.
938,933—Carriage Top. W. Woop, Ossining, N. Y.
939,795—Combined Steering and Driving Axle. J. W. Buchan, assignor of one-third to W. L. Taylor, Eastman, Ga.
939,478—Vehicle Body. E. W. Crosby, Sheffield, Ala.
939,681—Vehicle wheel. L. Garnier, Clermont-Ferrand, France.
939,246—Whip Socket. R. Habekost, Squirrel, Idaho.
939,414—Dumping Wagon. J. Heberling, Rochester, N. Y.
939,254—Fifth Wheel. J. Herby, Jamestown, N. Y.
939,695—Vehicle Wheel. T. Hubscher, Weehawken Heights, N. J.
939,427—Variable Speed Device. W. F. Main, Salt Lake City, Utah.
939,428—Pneumatic Tire. J. L. Maitland, Passaic, assignor of one-third to W. A. Callahan, Jersey City, and one-third to C. Rider, Mountainville, N. J.
939,524—Cushion Tire. W. E. Marengo, Worcester, assignor of one-half to J. B. Proulx, Southbridge, Mass.
939,852—Buggy Shaft Support. J. D. McCabe, assignor of one-third to R. L. Mason and one-third to B. Laurence, Woodbury, Tenn.
939,534—Four-horse Doubletree. M. McEvoy, Neola, Iowa.
939,610—Tire for Vehicle Wheels, T. Midgley, Worthington, Ohio.
939,547—Draft Tongue. T. Pojar, Dodge, Neb.
939,748—Resilient Wheel. J. Roundtree, Berkeley, Cal.
939,638—Resilient Tire, W. H. Rowling, Salinas, Cal.
939,555—Fore-carriage of Vehicles. J. Schmidt, Zurich, Switzerland.
939,565—Spring Wheel. H. H. Taylor, San Jose, assignor of one-half to himself, and one-half to F. J. Mayhew, San Francisco, Cal.
939,758—Wagon Bed. C. B. Tillery, London, Ky.
939,782—Dumping Wagon. T. Wright, Jersey City, N. J.
940,584—Wheel. W. P. Davies, Cincinnati, Ohio.
940,447—Wagon Dump. E. Ewel, Grand Island, and S. L. Clement, North Loup, Neb.
939,998—Storm Front for Wagons. H. Foster, Wolcott, Ind.
940,245—Spring Fork for Wheeled Vehicles. J. W. Gates, Los Angeles, Cal.
940,456—Wagon. G. W. Gayle, Gem, Kansas.
940,388—Safety Clip for Singletrees. E. Graham, Hazel Del. assignor of one-third to H. E. Warfel and one-third to D. E Bowers, Hidalgo, Ill.
940,145—Motor Vehicle. B. D. Gray, Providence, R. I., assignor to American Locomotive Company, New York, N. Y.
940,528—Tire. W. D. Harris, assignor to Harris Tire and Rubber Company, Philadelphia, Pa.
940,460—Cushion Tire. G. G. Hayes, Glenwood Springs, Col.
940,014—Vehicle Tire. C. O. Henderson, Dayton, Ohio, assignor of one-third to W. A. Pickens, Indianapolis, Ind.
940,154—Detachable Floor for Vehicle Bodies. W. B. C. Hershey, Columbus, O.
940,249—Wagon Brake. J. E. Hewitt, League City, Texas.
940,529—Motor Car Wind Screen. J. Hodgson, Carlisle, England.
940,158—Yielding Buggy Top Support. C. P. Johnson, Eureka, Kansas.
940,602—Vehicle Wheel Rim. O. Kirsch, Akron, Ohio.
940,343—Tire Shield. O. A. F. Mittelstadt, Hohensaathen-on-the-Oder, Germany.
940,547—Log Wagon. W. M. Norris, Edwards, Miss.
940,270—Wind Deflector for Automobiles. J. M. Patrick, Los Angeles, Cal.
940,368—Whiffletree. H. O. Schultz, assignor of one-half to A. J. Huff, Canton, Ohio.
940,069—Wheel Drive for Automobiles. T. G. Rowe. Los Angeles, Cal.
940,413—Storm Shield. C. F. Wensinger, Fremont, Ohio.
940,106—Roller Bearing Wheel. A. Wulff, assignor to Wagner Manufacturing Company, Cedar Falls, Iowa.

Copies of above patents may be obtained for fifteen cents each by addressing John A. Saul, solicitor of patents, Fendall Building, Washington, D. C.

BOSSERT TO PRODUCE STAMPED PARTS.

Pressed steel automobile parts are to be manufactured on a large scale by the Bossert Electric Construction Co., of Utica, N. Y., which for a dozen years has been making stamped and drawn steel specialties for the electrical trade. James P. Jones, who has been in the stamping business for fifteen years and is especially familiar with the requirements of the manufacturers of automobile axles and wheels, became manager of the company on the 7th ult., and some $40,000 worth of new machinery is being installed, including presses for the manufacture of brake drums, hub flanges, ball cups and retainers, thrust discs, clutch discs and pressed steel step hangers.

TO BUILD SMALL POWER WAGONS.

The Sterling Vehicle Company, of Toledo, Ohio, a new industry to manufacture small power wagons, is a probable addition to Toledo industries. Negotiations have progressed to such a point that local capital has been interested, and the old Shelby Tube Company site on Door Street secured as a location for the new industry.

Digitized by Google

RECENTLY EXPIRED PATENTS OF INTEREST TO VEHICLE INDUSTRY.

Patents Expired December 13, 1909.

487,788—Carriage, Wm. H. Sparks, Camden, N. J.
487,828—Holdback for Vehicles. Wm. Dunn, New York, N.Y.
488,000—Vehicle Shaft Support. Charles H. Ellis, Hanover, Mass.
488,061—Vehicle Tire. Wm. I. Bunker, LaGrange, Ill.
488,081—Wagon Body. Isaac A. Manchester, Fall River, Mass.
488,083—Vehicle Attachment. Wm. E. Miller, Brooklyn, N.Y.

Patents Expired December 20, 1909.

488,391—Whiffletree Hook. John F. Graves, Ellsworth, Minn.
488,444—Shifting Device for Vehicle Bodies. Chas. H. Mitchell, Oxford, Ohio.
488,489—Wagon Brake. Detlef F. Wegner and Arnold A. Beltman, Tower City, N. D.

Patents Expired December 27, 1909.

488,613—Holdback for Vehicles. Edward P. Parker, Archdale, N. C.
488,795—Vehicle Spring. John McPartland, Wakefield, R. I.
488,908—Thill Coupling. David W. Tanner, Marlin, Tex.

Patents Expired January 3, 1910.

489,009—Draft Equalizer. Jas. Jones, Sharon, Iowa.
489,024—Vehicle Brake. John M. Miller, Westwood, Ohio.
489,137—Endgate for Wagons. Geo. W. Wright, Table Rock, Neb.
489,157—Wagon Jack. Nelson Evans and William A. Henry, Ukiah, Cal.
489,189—Vehicle Brake. Henry J. Barnes, Oxville, Ill.
489,257—Dust and Mud Cap for Vehicle Hubs. Jared Maris, Cincinnati, Ohio.

Patents Expired January 10, 1910.

489,451—Buggy Top. John T. Bibb, Tacoma, Wash.
489,614—Pole or Shaft Support for Vehicles. Jas. J. Randolph, Cadiz, Ky.
489,688—Running Gear for Vehicles. Wm. B. Phillips, Crocker, Mo.
489,721—Wagon End Gate. Geo. S. Sneer, Marengo, Iowa.
489,838—Sand Band for Vehicles. Frank Sweetland, Angola, and John Faulks, Buffalo, N. Y.

The above list of patents, trade marks and designs of interest to our patrons are furnished by Davis & Davis, solicitors of American and foreign patents. Washington, D. C., and St. Paul Building, New York City.

THE TAXICAB IN A. D. 265.

Professor Giles recently told an audience in Harvard University a number of interesting things about the "measure-mile-drum-carriage"—the taxicab of ancient China. As the result of his research he had, he said, come across the following reference to the vehicle in the history of the Chin dynasty (A.D. 265-419): The measure-mile-drum-carriage is drawn by four horses. Its shape is like that of the south-pointing chariot. In the middle of it there is a wooden figure of a man holding a drum stick towards a drum. At the completion of every li the man strikes a blow on the drum.

Under the years A.D. 815, 820, and 987 they again heard of the taxicab, and the following further description was given; They are painted red, with pictures of flowers and birds on the four sides, and in two stories handsomely adorned with carvings. At the completion of every li the wooden figure of a man in the lower story strikes a drum, and at the completion of every 10 li a man in the upper story strikes a bell. There is a pole with a phoenix-like head, and a team of four horses. Formerly the chariot held eighteen soldiers, which number was increased in 987 by the Emperor T'ai Tsung to thirty.

The taxicab was again to the front in 1027, when an account of the mechanism was given, and even so late as the fourteenth century they read of a well-known poet who wrote a poem entitled "Ode to a Haxicab," in its praise.

A model of the chassis of the taxicab, made by Professor Hopkinson from the specification discovered by Professor Giles, was exhibited to the audience. It was shown in actual working, and at regular intervals the revolving wheels caused a drum to be struck.

THE PROPOSED VEHICLE WARRANTY.

Organized dealers, through their national federation, have prevailed on the Carriage Manufacturers' Association of America to recommend a uniform warranty on vehicles, one that protects the dealer and his customer one year from date of sale to the latter and puts the dealer at no expense in replacing defective parts. The Carriage Manufacturers' Association of America is composed of builders who sell the product at wholesale to the dealers, for the most part, dealers who are commonly known in the trade as implement dealers.

About 70 per cent. of the builders who seek the implement dealers' trade is represented in the Carriage Manufacturers' Association of America, and if all of these ratify the action of the association by adopting the proposed warranty, in all probability the remaining 30 per cent. of this class of builders will follow suit.

The manufacturer who adopts the new form obligates himself to replace actual defects in workmanship or material which develop within one year of use as a private vehicle. Heretofore he promised only to replace defective parts within one year from the time the job left his factory. Under such terms the warranty on some jobs expired before they left the dealers' hands. The builder now requires the dealer to pay transfortation charges on parts sent to replace defects free of expense to the dealer and consumer.

Under present conditions the buyer feels under no obligations beyond paying for the job he buys. If the new warranty is adopted and observed to the letter, the buyer will sign a pledge to give the vehicle fair and reasonable use and make no claims for damages resulting from accident or abuse. He also will agree to report all claims for defects within thirty days after discovery, so that the claim can be adjusted while the facts are fresh in mind. Requiring the buyer to sign an obligation of that character will surely eliminate many unjust claims for parts. This is one of the strongest features of the warranty.

The dealer is obligated to handle all claims in a fair and impartial manner. If he furnishes parts free on an unjust claim he must do it at his own expense. To be fair and impartial in the handling of claims he must require the buyer to live up to the letter of his obligation and under no circumstances charge a manufacturer with repairs not due the buyer under the warranty. On the other hand, he must see that the interests of the buyer are protected and permit no manufacturer to shirk his responsibility.

The unjust claim for repairs has been the most annoying problem in the vehicle trade, the trouble being largely due to the fact that most warranties failed to give the dealer sufficient protection and none obligated the consumer in writing to "be fair" with the builder.

FIRE AT MANSFIELD.

Fire destroyed one of the buildings of the Mansfield Rubber Co., at Mansfield, Ohio, on January 12. The structure, built of brick, 44x84 feet in ground dimensions, was used as a machine shop and storehouse. Crude rubber estimated to be worth $10,000 was lost, and the entire loss is placed at $16,000. The building will be rebuilt.

WILL BUILD AEROPLANE TIRES.

The B. F. Goodrich Co. are about to place on the market as a regular product an aeroplane tire. Several hundred have already been manufactured in the Akron factory for the Herring-Curtis Co., of Hammondsport, N. Y., manufacturers of the Glenn H. Curtiss flying machine. The construction of the tire is a modification of the Palmer bicycle tire, which has been manufactured by the Goodrich company for a number of years. Buoyancy and strength are the qualities which have been sought. The tires are smaller than bicycle tires, being 20 inches in diameter, while the tubes are thicker, being 2 and 2¼ inches in tube diameter, while the average bicycle tire is 1½ inches through.

Digitized by Google

Trade News From Near and Far

NEW FIRMS AND INCORPORATIONS.

The Neches Motor Car Co. has been incorporated in Beaumont, Texas, with a capital stock of $10,000.

The Joers-Gettier Motor Car Co. has been ircorporated in Lincoln, Neb., with a capital stock of $25,000.

The Rogers Motor Car Co. has been incorporated in Ralston, Neb., with a capital stock of $250,000.

The Crest Motor Co. has been incorporated in Cleveland, Ohio, with a capital stock of $15,000.

E. R. Anderson is putting in a new stock of vehicles, etc., in LaSalle, Colo.

The Fehring Carriage Company has filed certificates of partnership with the county clerk at Columbus, Ind.

Articles of incorporation of the Sullivan Wagon Manufacturing Company have been filed with the county clerk at Troy, N. Y. The directors are George W. Sullivan, Francis D. Sullivan and Grace E. Sullivan. The capital stock is $15,000.

Springer & Smith is the name of a new vehicle firm at Independence, Kan.

The Indiana Specialty Co. has been incorporated in New Albany, Ind., with a capital of $10,000, to manufacture automobile parts.

The Jess & Sturdy Carriage Co., of Springfield, Mo., has increased its capital stock from $15,000 to $20,000.

The Western Ohio Automobile Co. has been incorporated in Celina, Ohio, with a capital stock of $10,000.

The Bruner Steel Wagon Co., of Wapakoneta, Ohio, has increased its capital stock from $100,000 to $125,000.

The Atlas Motor Car Co. has been incorporated in Cincinnati, Ohio, with a capital stock of $10,000.

The Blevis Motor Company has been incorporated in Pierre, S. D., with a capital stock of $125,000.

The Beaumont Carriage and Implement Co. has been incorporated in Beaumont, Texas, with a capital stock of $30,000.

The Southern Auto Co. has been incorporated in Spartansburg, S. C., with a capital stock of $10,000.

Glindinning & Bottomly are establishing themselves in the vehicle business in Iroquois, S. D.

The Adrem Motor Co. has been incorporated in New Castle, Ind., with a capital stock of $3,000.

E. Coady & Co. have opened a new stock of vehicles, etc., in McCloud, Okla.

The Erath Carriage Co. has been chartered at Abbeville, La., with a capital of $10,000.

S. A. Stangeland has opened a new stock of buggies, etc., in Onida, S. D.

The Wallace Automobile Co. has been incorporated in Omaha, Neb., with a capital stock of $10,000.

The Sebring Motor Co. has been incorporated in Sebring, Ohio, with a capital stock of $25,000.

The Detroit Body Co. has engaged in business in Detroit, Mich., with a capital stock of $20,000.

The Detroit Electric Vehicle Co. has been incorporated in Detroit, Mich., with a capital of $5,000.

E. O. Martin is figuring on engaging in the vehicle business in Farmington, Wash.

The Southern Motor Car & Truck Co. has been incorporated in Atlanta, Ga., with a capital stock of $30,000.

The Direct Valve Mfg. Co., capital $50,000, to manufacture auto parts, has been incorporated by W. M. Parkinson, W. H. Parkinson and H. E. Parkinson, all of Indianapolis, Ind.

The Interurban Motor Co., capital $8,000, to deal in all kinds of vehicles, has been incorporated by O. L. Stewart and George C. Mowry at Ithaca, N. Y.

At Decatur, Ill., the Townsend Bros. Carriage Company has been incorporated; capital, $6,000.

Charles Lange & Bros. Co., of Chicago, Ill., manufacturers of buggies, etc., has just been incorporated.

The Herder, Snell, Fleck, Miller Company, vehicles, implements and hardware, have organized at Yoakum, Texas.

At Portland, Ind., the Portland Body Works, to manufacture vehicle bodies, was incorporated with a capital of $10,000.

The Johnson Co., Radcliffe, Ia., hardware, implements, vehicles, etc., has been incorporated; capital $25,000.

The Wood Carriage and Automobile Co., Union, Ia., has been incorporated, capital $25,000.

At Union, Ia., the Watson Co., implements, vehicles, etc., has been incorporated with a capital stock of $25,000.

At Vicksburg, Miss., the Queen City Wagon & Mfg. Co. has been incorporated with a capital of $10,000.

The Schenck Pneumatic Wheel Company, St. Louis, Mo., capital $75,000, has been incorporated by Nicholas Schenck and Emma Schenck to sell and manufacture vehicle wheels.

Maurice Yuster and A. M. Eile are the moving spirits in the Yuster Axle and Transmission Company, of South Bend, Ind., a concern which promises to be a factor in automobile circles.

The San Bernardino (Cal.) Vehicle and Implement Co. has been incorporated with a capital stock of $20,000 by J. F. Condon, Los Angeles; W. Lee Dixon and Harold F. Condon, of San Bernardino.

The William F. Kramer Co., Dayton, O., wagon works, increased capital from $10,000 to $50,000.

The C. W. Scott Company, Bryn Mawr, Pa., capital $5,000, has been incorporated by C. W. Scott and William Hughes.

The Haywood Tire and Equipping Co., Indianapolis, Ind., capital, $6,000, dealers in motors and motor parts, has been incorporated by F. H. Rupert, M. Rupert and M. E. Haywood.

Electric Carriage and Battery Co., St. Paul, Minn., capital $60,000, has been incorporated by M. L. Hughes, G. H. Strickland, M. E. Tramer and others.

The Kent Motor Company, Grand Rapids, Mich., has incorporated. It is capitalized at $2,000 and the purpose is to manufacture automobiles. Those interested are Fred B. Clark, Roy L. Leigh and Nelson M. Abernethy.

At Garrett, Ind., The Hoosier Auto Co., manufacturers, has been incorporated; capital $80,000.

The Booth Demountable Rim Co., Cleveland, O., has been incorporated; capital, $50,000.

The Western Implement Co., Indianapolis, Ind., has been incorporated to manufacture implements and vehicles; capital $10,000.

Heaney Automobile Co., Minneapolis, Minn., to deal in motor cars, vehicles and implements, has been incorporated; capital $50,000.

At St. Louis, Mo., the Mound City Buggy Co. has been incorporated to deal in vehicles and autos; capital $15,000.

Superior Motor Vehicle Co., Buffalo, N. Y., capital $200,000, has been incorporated by H. A. Kamman and J. W. Lansing.

At the formal organization of the Toeppner Auto Truck Company, Bay City, Mich., the following officers were chosen: President, Louis Hine; vice-president, Robert Toeppner; secretary, W. J. Lambert; treasurer, T. R. Shaver.

W. L. Regen, of Nashville, Tenn., has closed a deal whereby a buggy manufacturing plant is to be established at Lewisburg, Tenn.

Digitized by Google

BUSINESS CHANGES.

The Calor Dump Wagon Company, of Palmyra, N. Y., has disposed of its business to the Groton Bridge Manufacturing Company, of Groton, N. Y. It is expected that this new industry will be ready to commence operations in February.

The firm of Bailey & Higinbotham, implement, buggy and hradware dealers, at New Castle, Ind., have dissolved partnership, L. W. Bailey having purchased the entire business and he will continue it at the same location.

Bair & Schrack, of Sinking Spring, Pa., have dissolved partnership. The business will be continued by Charles H. Schrack under the name of Sinking Spring Carriage Co.

David & Hones, Sparta, Wis., are adding a new department to their implement business in the shape of an automobile garage.

At Deerfield, Wis., A. Edwards & Co., dealers in vehicles, implements, etc., dissolved partnership. E. T. Cleven retires from the firm.

Joseph J. Moe, dealer in vehicles, implements, etc., at Eau Claire, Wis., is succeeded by Moe & Kaiser Implement Co.

Lovsnes & Sjoidal, dealers in vehicles, implements and hardware at Ada, Minn., have dissolved partnership. Mr. Sjoidal succeeds.

David Bradley & Co., vehicles, implements, etc., Council Bluffs, Ia., are succeeded by Bradley, Merriam & Smith.

Frank D. Mason has purchased the interest of L. H. Simon, of Springer & Simon, carriage repair shops, Bloomington, Ill. Mr. Mason has been identified with the firm for the past year in charge of the rubber tire department.

John M. Wright, who went to Covington, Ga., a year ago and organized the Covington Buggy Company as its president, has sold his entire stock in the company to the other stockholders and C. C. Brooks has been elected president and manager and has assumed his duties. Mr. Wright has bought stock in the Beaver Dam Manufacturing Company at Hartwell and has been elected secretary of the company.

William H. Fox has sold his carriage factory at Watseka, Ill., to his sons for $4,000.

Duffey & Son, Highland, Wis., hardware, implements, vehicles, etc., sold out to Engels & Wall.

Belscamper & Bryhan, Lancaster, Wis., implements, vehicles, etc., have been succeeded by Bryhan, Roth & Luckwood.

Leare & Anderson, Middleton, Ill., dealers in hardware, implements, vehicles, etc., have sold out to Chestnut Bros.

Wolfe & Davis, Waukesha, Wis., dealers in implements and vehicles, have been succeeded by Davis Bros.

Bentley & Ogden, Allegan, Mich., dealers in implements, vehicles, etc., have been succeeded by Bentley & Thiefenthal.

Charles H. Campbell has purchased the stock of vehicles, etc., of Isaac Lowe, in Caro, Mich.

L. R. Smith and J. H. Rhoades have purchased the plant of the Etowah Vehicle Mfg. Co., in Rome, Ga.

O. R. Kimball has purchased an interest in the vehicle and hardware firm of M. Gurett & Co., in Douglas, Wash.

The Ettwein Motor Co., of St. Louis, Mo., has changed its name to the McGee-Huckell Motor Co., and increased its capital stock to $40,000.

M. F. Bowler has disposed of his stock of vehicles, etc., in Groton, S. D., to J. F. Bowler.

W. H. Stroud has purchased the vehicle stock of N. A. Keeler in Grand Valley, S. D.

R. M. Hutchinson, of Ruskin, Neb., has sold a half interest in his stock of vehicles, etc., to H. L. Michelsen.

Olson Bros., of Aurora, Neb., have sold out their vehicle business to Anderson & Dorsey.

The Michigan Auto Body Co. has succeeded to the business of the Detroit-Milford Sanitary Mfg. Co., in Milford, Mich.

Wm. Kupers has sold a half interest in his vehicle and implement business in Pendleton, Ore., to E. C. McCook.

G. H. Miller has succeeded to the vehicle business of Mi[illegible] & Son, in Morenci, Mich.

Dieter & Dankey have succeeded Leonard Dieter in the vehicle business in Madison, Neb.

Scott & Jones have purchased the stock of vehicles, etc., [illegible] George Davidson, in Batavia, Ia.

Miller & Burnett have sold out their stock of carriages, implements, etc., to W. N. Waldo.

Ohling & Taylor have disposed of their stock of vehicles, etc., in Albany, Ore., to Hurlburt & Ballack.

The Sterling Sales Co. has succeeded to the business of the Cleveland Automobile Co., in Cleveland, Ohio.

J. B. Goodwin has purchased the stock of vehicles, etc., [illegible] S. H. Myton, in Winfield, Kas.

H. C. Leonard has succeeded to the vehicle and implement business of Leonard & Mansion, in Augusta, Kas.

S. H. Penfield succeeds Clare A. Pickard as president of the Salisbury (N. Y.) Wheel and Manufacturing Co. Edwin [illegible] Cook was appointed as vice-president to fill the vacancy caused by the advancement of Mr. Penfield to the presidency of the corporation.

William C. Fauber, who for almost a half century has been engaged in the coachmaking business in Lebanon, Pa., has sold his plant to David L. Layser, of Millbach, who will take possession on April 1 next.

Charles F. Gray has vacated the warerooms of the Kingston (N. Y.) Carriage Company, and moved his stock to his building on Broadway near Albany avenue. The business at the carriage company will be conducted by William A. Kennedy, who has been in the business for the past eighteen years and has had the active management of the concern since starting.

The Bearden-Chenoweth Carriage Company, Nashville, Tenn. amended its charter, changing the name to the Bearden Carriage Company, and increasing the authorized capital stock from $10,000 to $20,000.

IMPROVEMENTS—EXTENSIONS.

The Southern Carriage Co. is establishing the machinery in its new plant in Emporia, Va.

The Mogul Wagon Works, of Hopkinsville, Ky., has increased the capacity of its plant by an expenditure of $50,000.

An automobile repair department has been added to the wagon works of Stilz & Graessle, at Nashville, Tenn.

The Hess Spring & Axle Co., which operates big plants in Pontiac, Mich., and Carthage,O., is planning to bring relief to automobile manufacturers through the medium of a big axle plant to be located at Pontiac, Mich.

By the closing of a business agreement between the Victor Manufacturing Company, Detroit, and the Walkerville Carriage Goods Company, Canada, the factory property formerly occupied by the imperial Rattan Company, in Walkerville, will be utilized for the manufacture of automobiles.

The contract has been let for the brick work necessary on the addition to the Lack Singletree Company at Paducah, Ky.

French & Hecht, Davenport, Ia., owners of the new wagon works at that place, announce their intention of building a large new foundry, the work to start April 1. The foundry will probably be a three-story structure of reinforced concrete in keeping with the other buildings of the firm. It will occupy nearly all of the block south of Third and east of LeClaire street, formerly used as lumber yards by the old Lindsey-Phelps Company. A strip on the north side will be reserved for a warehouse.

The new factory of the Victor Automobile Manufacturing Company, corner of Boyle avenue and Papin street, St. Louis, Mo., which has been under construction since last June, will when completed, be one of the most modern factories in St. Louis.

Preparations now under way by the Rapid Motor Vehicle

Digitized by Google

Company, Pontiac, Mich., contemplate the erection the coming year of a huge addition to the plant.

Jackson, Mich., has long been noted as a center for the manufacture of vehicles and vehicle parts, and its repute in this line has been greatly added to by the establishment of the Hayes Wheel Company, organized only a little over a year ago. At the beginning, only the main factory building, 250x66 feet, was required, but more space became necessary and a two story addition was erected 50x66 feet. So rapid was the growth of the company's business last year that until another addition was required, and Factory No. 2, a duplicate of the main factory building, was erected. The product of the company is wooden wheels for automobiles, trucks, buggies and all other classes of vehicles. The officers of the company are: C. B. Hayes, president and general manager; Mark Merriman, vice-president; A. C. Bloomfield, treasurer, and Richard H. Loveman, secretary.

Experiments being conducted at the plant of the Richards Iron Works, Manitowoc, Wis., in the manufacture of motors for use in construction of automobiles may lead to the establishment of an automobile plant in the next few months. Should the Richards company experiment prove successful the company will engage in the manufacture on an extentive scale.

The Charles J. Elig Carriage Company, of Wheeling, W. Va., has taken on the manufacture of motor trucks and wagons, building some very heavy work in this line.

The Sheldon Axle Company, Wilkes-Barre, Pa. has made a $200,000 bond issue for providing funds for additions to its plant to accommodate its growing business, chiefly the new plant for making automobile axles and parts.

At Detroit plans that have been quietly worked out for the last two months were announced by the Van Dyke Motor Co. Within a few weeks ground will be broken by the company for the erection of a large plant at Junction and Leverette avenues, which President Van Dyke expects to have completed during the month of April.

FIRES.

Wildberger & Johnson have suffered a fire loss in their vehicle establishment in Julien, Neb.

The stock of vehicles, etc., of Walberts & Timberlake, in West Mineral, Kas., has been destroyed by fire.

The plant of the Otterson Wagon Co., in Morgantown, W. Va., has been damaged by fire to the extent of $8,000.

The stock of vehicles, etc., of J. H. Alley & Sons, in Mercer, Mo., has been damaged by fire.

At New Lisbon, Ind., Robbensbarger Bros., dealers in vehicles and implements, etc., suffered a fire loss.

At West Concord, N. H., fire damaged the blacksmith shop of the Chandler Eastman Carriage Works.

Fire amounting to $1,000 in damages, occurred in the carriage paint shop of I. Millinski, Cambridge, Mass.

Gasoline from an exploding tinner's torch set fire to the carriage factory of Barnard L. McGurk, at the northeast corner of Albany and Blue Hills avenues, Hartford, Conn., and caused damage of about $2,000, one half on stock and fixtures and the other half on the building. The property is covered by blanket insurance.

The Bonnell Carriage Works, Eau Claire, Wis., was partially burned in January, causing damage of $5,000.

Breaking under its weight of ice, a telephone wire from a cross-tree on the wagon factory of George J. Swope, at 2538-40 North Twenty-fifth street, Philadelphia, Pa., fell across another high power wire, burned out its insulation, and sent a lightning bolt of flame darting to the woodwork on the building. The wood around the roof and the window trimmings burst into flames, and for a time serious damage was threatened. The flames were gotten under control before they had done serious damage, the fire being confined to the woodwork on the exterior of the building.

BUSINESS TROUBLES.

Proceedings in bankruptcy have been instituted against Wilson & Son, Bolton, Texas, by the Staver Carriage Co., Emerson Manufacturing Co., and the Avery Plow Co.

F. Goodsell & Co., Moorhead, Minn., dealers in vehicles and implements, made a voluntary assignment. John Costain was appointed receiver. Liabilities $20,000.

A receiver has been asked for the business of John H. Hamilton, Green Castle, Ind., by the Turnbull Wagon Co.

Walter D. Stevens, engaged in the carriage business in Joliet, Ill., has filed a voluntary petition in bankruptcy. Mr. Stevens places his assets at between $17,000 and $18,000 and his liabilities at about $16,000. An excessive business for the amount of capital is said to be responsible for this action.

By a petition filed in the United States District Court at Little Rock, Ark., it is probable that the Trainor Carriage Company will be declared a bankrupt and placed in the hands of a receiver. It has been asked for by three creditors of the company. The Murphy Varnish Company alleges that the carriage company owes it $145.47. H. M. Van Deusen Whip Company, $44.75, and J. G. Tibbets & Sons Carriage Company, $4,091.25. It is claimed that the carriage company has been insolvent since last August.

A receiver has been appointed for the Industrial Automobile Co., of Elkhart, Ind., the liabilities being placed at $4,313.59, as against considerably less in assets. The company commenced business last April, making cars, motors, and parts. It is alleged in the petition that the stock and machinery of the plant were being disposed of; that there are numerous creditors threatening suit, and that a receivership is necessary to conserve the interests of the creditors.

NEW CONCERN FORMED OUT OF BROWN-LIPE

The Brown-Lipe-Chapin Company, with a capitalization of $1,500,000, has been organized in Syracuse, N. Y., to take over the differential gear department of the Brown-Lipe Gear Company. C. S. Mott, of the Weston-Mott Company, Flint, Mich., is the only stockholder not in the parent corporation. During the past two years the present plant of the Brown-Lipe Gear Company has been worked day and night with 825 employes. The increasing demand made it necessary to separate the differential gear department from the transmission and steering gear department to provide sufficient room for the latter.

The business of the new company will be managed by H. W. Chapin, who for the past fifteen years has been general manager of the Brown-Lipe Gear Company. He will retain this position in addition to his new one. The new company will assume all of the differential gear contracts of the parent, and all the machinery and equipment used by the latter in this branch will be turned over.

A. M. C. M. A. TO BE DISBANDED.

It is stated on what appears to be good inside information that the A. M. C. M. A. is to be abandoned. It was origiually organized under a contract for five years, and the time will expire within the next week or two. That this contact will not be renewed is largely due to the absence of companies outside of the A. L. A. M. The only company left will be the Ford Motor Company. Henry Ford is still sticking to his old position, and the disbanding of the A. M. C. M. A. is simply a logical move in the absence of members to support it.

IMPORTANT, IF TRUE.

According to a news item going the rounds, the Anderson Carriage Co., of Detroit, Mich., has made arrangements with Thomas A. Edison, which will give that firm practically exclusive control in the United States of the new Edison storage battery. J. Pierpont Morgan is said to have control of the sale in Europe.

Digitized by Google

CENTRAL DETROIT PLANT.

Gigantic Operations of the General Motors Co. in the City of the Straits.

The General Motors Company, in establishing headquarters in Detroit, will invest $2,500,000 in a plant to occupy a 50-acre tract which has been purchased at a cost of nearly $300,000.

This industry, which is to be the central and parent plant for the General Motors Company operations, is expected to give employment to between 6,000 and 7,000 men.

The buildings are planned to cover a ground area of nearly 40 acres and have a floor space of nearly 100 acres—the largest establishment of the kind in world.

W. C. Durant, of Flint, vice-president and general manager of the General Motors Company, declares that his reason for placing this central plant in Detroit is because Detroit is destined to be, even more than it has been, the automobile centre of the world, also because Detroit has gained a reputation for excellent labor conditions.

The General Motors Company now controls in Michigan the following automobile industries: Buick, Flint; Cadillac, Detroit; Welch, Detroit and Pontiac; Olds, Lansing; Oakland, Pontiac; Rapid, Pontiac; Carter Car, Pontiac; Reliance, Owosso; Ranier, Saginaw; Northway, Detroit; Michigan Auto Parts Company, Detroit; Weston-Mott, Flint.

It is possible that the Detroit plant will be operated by a distinct corporation, apart from, yet really within, the General Motors Company.

It is announced by those behind the deal that the various automobile factories in Michigan controlled by the combination will continue in operation, and that the tremendous plant to be constructed will in no way interfere with their work except that sooner or later they will become assembling plants.

The factory will be known as the Central Detroit Plant, and in it will be standardized and centralized the manufacture of parts of automobiles for the various subsidiary companies.

ROOM FOR MORE, PERHAPS.

There are now in operation in Indiana, forty-five automobile factories in which the estimated output for the coming season will be 35,000 cars, estimated to be valued at $46,000,000, or 6.3 per cent of the personal and corporate property valuation of the state. The general upward trend of the automobile business is shown by the records at the office of the Secretary of State for the twelve and one-half months ending January 1, 1910.

In that period seventy-four corporations were formed wholly or in part for participation in the business, while four concerns previously incorporated increased their capital stock to provide means for meeting the automobile demand. The combined authorized capital stock of the seventy-four concerns is $7,785,500. The combined increases of capital stock for the four companies making increases amounted to $1,785,000, making a total authorized capitalization for the period of $9,062,500. Some idea of the immensity of this authorized capitalization may be had when it is remembered that it is approximately 1.3 per cent of the total assessable value of all the personal and corporate property of the state as returned by the State Board of Tax Commissioners and the county assessing officials in 1909.

CLEVER ADVERTISING.

The Consolidated Rubber Tire Co. is issuing some clever "folders" in colors on the tire subject. The latest under our notice goes way back to "Ptoleny" and his "Ptroubles." Any potentate who had the job of building pyramids must have had periods of fatigue when he was thoroughly "tired," so that consolidated consolation was grateful to a degree. It is the same now as then, and Kelly-Springfield is another way of spelling comfort and satisfaction.

ANNUAL MEETINGS OF TIRE COMPANIES.

At the annual meeting of shareholders of the B. F. Goodrich Co., on January 19, the report made on the business of the year was satisfactory, but in accordance with the policy of the company no statement was given out. The regular quarterly dividend of 2½ per cent. was announced. The directors were re-elected: George T. Perkins, George W. Crouse, B. G. Work, F. H. Mason, H. E. Raymond, E. C. Shaw and C. C. Goodrich. The board reorganized and elected officers as follows: President, Bertram G. Work; first vice-president, Frank H. Mason; second vice-president, H. E. Raymond; secretary and Assistant Treasurer, Charles B. Raymond; Treasurer and Assistant Secretary, William A. Means (succeeding Walter A. Folger); general manager of the works, E. C. Shaw.

The shareholders of the Swinehart Tire and Rubber Co. met on January 17. The directors chosen were Frank B. Theiss, William Byrider, R. A. May, Joseph Dangel, J. A. Swinehart, W. W. Wuchter and Frank R. Talbot, the latter succeeding J. O. Surbey. The last quarterly dividend is 2 per cent. The officers elected are: President and general manager, W. W. Wuchter (formerly vice-president, to succeed J. A. Swinehart, who has retired from active participation in the managing end of the business); vice-president, James A. Swinehart; secretary, C. O. Baughman; treasurer, R. A. May. The directors decided to call a meeting of the shareholders for February 16, to vote on the question of increasing the capital, which is now $200,000.

The shareholders of the Colonial Tire and Rubber Co., who control the Firestone "Sidewire" tire patents in Europe, held their annual meeting on January 14, and elected as directors James A Swinehart, P. D. Hall, William Byrider, John Byrider and Frank E. Whittemore, of Akron , Ohio, and F. S. Lahm, of Paris, France. A 10 per cent annual dividend was declared. The officers elected are: President, Frank S. Lahm; vice-president, James A. Swinehart; secretary and treasurer, P. D. Hall.

At the annual meeting of the Mansfield Rubber Co., at Mansfield, Ohio,, on January 11, the directors elected were: C. H. Walters, F. H. Walters and F. M. Bushnell, of Mansfield; C. R. Grant and F. A. Wilcox, of Akron; Dr. James E. Waite, of Lodi, and Dr. R. C. Kinnaman, of Ashland, Ohio. Officers elected: President, Frank A. Wilcox; vice-president, Charles H. Walters; treasurer, F. M. Bushnell.

RETIREMENT OF MR. FOLGER.

Mr. Walter A. Folger, who retired as treasurer of the B. F. Goodrich Co. at the recent meeting, intends to leave active participation in the business altogether and go with his family to the Pacific Coast, where they will spend several months. Mr. Folger is 52 years old and has been treasurer of the Goodrich company since 1894, leaving the position of cashier of the Second National Bank of Akron to accept that office. Reared in a nearby country town he worked his way up from a clerk's position and in his years of efficient service for the Goodrich company has well earned the right to retire. Mr. Folger is succeeded by William A Means, who has been assistant treasurer.

INCREASED CAPITAL FOR EXPANSION PURPOSES.

Leave has been granted to the Stein Double Cushion Tire Co. to increase its capital stock from $100,000 to $200,000. The expansion is intended to accommodate the addition of automobile tires to the company's products. New machinery has been purchased and installed to provide for the manufacture of 100 tires of the "lap lock" type per day. The company, it is reported, intend to put up an additional building next summer. The officers of the company are C. K. Sunshine, president, and M. M. Neuman, secretary and treasurer.

The local builders of Des Moines, Iowa, are on the warpath against the express companies because of a recently established practice of sending delivery wagons out of town for repairs.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

MADISON SQUARE GARDEN AUTO SHOW.

The 1910 automobile show under the direction of the American Licensed Automobile Manufacturers was a very fine effort. The spacious Garden was utilized in every part, adding much to the exhibition space over former shows. The decorative scheme was new and pleasing. The idea of uniformity of display as regarded signs, and such notice-attracting details, was well thought out, and as well carried out. The attractions demonstrated their popularity by the very large crowds that filled the spaces. The visitors seemed to well understand, in a majority of instances, what they were looking at, and the demonstrations employed to point out the merits of the exhibits found they were up against intelligent questioners. Even the ladies could discuss sparking in aspects other than the parlor kind, and their ideas of the "intake," the exhaust and the fan, were such as to show they were in no wise mixed in their notions of the functions of the parts mentioned.

As to the exhibits. There was a very large collecton. The accessories outnumbered the cars and trucks, which is most natural, but the total was a very representative display of the scope of the car-making industry.

The electric propelled vehicles had their own section, and the representation was comprehensive. It is curious to note how very popular the game of "follow your leader" is in all the efforts at car building. This year some one has lead off with an "electric" having the conformation and appearance of a gasoline car, placing the batteries where the engine would be looked for in front of the dash.

Why an electric should be thus constructed it is difficult to guess, unless it is a bid by the maker to fill the eye of the man who is used to the looks of the gas car. Even such carriage builders who should have more taste, have fallen into the style, with an exception which we note, and have examples of this kind of job.

To instance what may be done with the electric proposition when a carriage builder of ideas faces the problem, it is but necessary to consider the exhibit of the F. E. Bailey & Co., inc., whose electric Victoria, regarded from every point of view, is a real pleasure carriage of quality. The idea, design, construction and finish put it in quite a class by itself, so we have no reasons for comparison. It stood alone as an exhibit and must have made the few real carriage builders who had exhibits on the floor, stop, study and think.

In the larger aspects of the display, while there were a great number of gas-propelled cars on the premises, it was enough to arrest the attention of even the inexpert to note what a deadly sameness of design was manifest.

Had the bodies of the touring car been built by the linear foot and cut off in lengths of eighty inches, there could not have been less of a sameness than was actually in evidence.

This ought to mean, we suppose, that a working draft of body had been found that was so ideally suited to the conditions to be met, that all originality was superfluous. If this is a fact, then we have arrived at a standardization of car body as surely as we have at the right shape for a dump cart.

Carriage body builders who are responsible for some of the work that was exhibited are not putting their own ideas into concrete form, it would seem, but are building the work that is called for by the auto maker, and not tagging it with any comment or criticism of their own.

An enlightening illustration would have been the comparison of the Brewster touring body shown in the Grand Central Palace exhibit, and the type so universally shown in the Garden.

The automobile maker, we should judge, is still very much a worker in metal. His efforts are being most successfully directed towards the simplification and standardization of the power —a problem worthy of his best thought. As he has a long distance to travel on this road before he reaches the crown of his ambition, perhaps he has not the time to devote to the art side of the problem. The evolution of the carriage builder from the maker of a mere something in which to transport passengers to the finished product of the most refined art that the carriage has become, was a matter of years. How then can the auto-smith, or worker in metal, surround the problem to advantage with a world of experience yet to acquire. As a copyist he is so far deserving of approbation. In time the building of motor cars so that they will represent, or stand for "class" and individual distinction, will come about, but the work will have passed into more experienced hands, and the industry will have evolved from the every-year-a-new-model factory to a real and stable industry.

We saw nothing in touring car bodies that offered any opportunity for comment on meritorious, novel, or elegant construction.

The auto-smith, as well as the auto engineer, was well to the front. There were many and well thought out methods of engine construction, body suspension and frame, or what we think might be termed running gear, building. The efforts at simplicity of design, with as few working parts as possible, are making notable progress.

A composite engine and frame might be built, selecting from the many good points shown that would be very near the last word in engine and frame bulding. By degrees the engineer is learning the value of the full elliptic spring, and there is not the Chinese regularity of three-quarter suspension so universally the practice until better ideas began to prevail.

The parts manufacturer is the real improver. He is always a man of ideas, and being a specialist, it is quite to be expected that he will have novelties of worthy, as well as noteworthy, excellence.

There is a tendency to look upon the accessory man as not in the class of the builder, and the latter does not like to be regarded as a mere assembler, trimmer and painter, but the good features presented by the specialist are bound to be considered in their season, even if it is only to attempt to plagiarize the idea, euphemistically called adapting.

We should not care to characterize the "torpedo" style of construction that is more or less in evidence. It is, it must be, a purely ephemeral or sporadic fancy that will die of its own inertia. It is, however, symptomatic of what we said, the trade is yet in the Chinese stage of its evolution, running along imitative lines, and prone to fall down before very strange idols, indeed. When these monstrosities have lived their day, even the

Digitized by Google

builders of them will be glad to hide the catalogues in which they were pictured forth to possible customers.

These, in brief, are the impressions we have received from an inspection of what the manufacturers had to offer. The details of construction we shall take up in succeeding issues, in their departments, in order to go into technical details with the proper particularity.

AS SEEN THROUGH BRITISH EYES.

While the American industry is known on this side to be of gigantic proportions, its peculiarities are not so widely recognized, and a well known member of the British trade, recently returned from his third sojourn in the States, has given me some interesting information on trade conditions, says a writer in The Motor (London).

As might be expected, the vast extent of the country has a great influence on the industry, and cars popular in one centre may be unknown in another. While we on this side are familiar with a few American cars, there are scores of makes practically unknown here, and many of them almost unknown outside of their own particular territory.

We are apt to connect the American industry with a few names, such as Cadillac, Mitchell, Packard, Pierce Arrow, Ford, etc., but while these are the widest known, they are by no means preponderate. Practically every town of importance has its local maker, with an output equal to many of our smaller firms, who builds up from manufactured parts.

The making of car parts forms the largest part of the American industry, and with specialists in the various details, one firm building engines, another gears, another live axles, another frames, another electrical fittings, etc., etc., the assembler can offer a really well made car at a reasonable price.

The market for British cars is limited, only the very highest grade being popular, and in this somewhat exclusive market, Renaults, F.I.A.T.s and Italas are more than successful rivals with ourselves. In the Far West the motor buggies are exceedingly popular, as the farmers are prosperous and quite unprejudiced in these matters. These buggies are exercising a very great influence on American motoring, as their increasing use is directing attention to the necessity for improved roads, even in the country districts, and quite an important campaign is in progress to secure better highways.

In New York and the eastern cities generally it is the European and American car on European lines that is in use, about 30 H.P. to 40 H.P. being the most popular size. Farther west the lighter cars and runabouts increase in number, and as the Far West is struck the motor buggy is found to be the favorite type. As the roads increase in number and improve in quality, eastern ideas in car construction will spread across the continent, so that it will be seen that there are even yet great potentialities in the American industry.

The enormous manufacture of parts recalls a stage in our own industry, but in the States it promises to be a permanent industry in itself, for in the centres far removed from the principal cities, the locally-assembled car will retain its popularity for many years yet. When it is calculated that the American makers will in the next twelve months turn out as many cars as are already on the road, it will be understood that the movement is but in its early stages even yet, despite its present dimensions.

WILL BUILD AUTOS.

The Excelsior Carriage Company, Watertown, N. Y., is preparing to engage in the manufacture and sale of automobiles. The company will soon complete and try out their first car, one designed for delivery purposes. For the present they will confine their product of motor driven vehicles to cars for mercantile purposes, but will eventually construct automobiles of the runabout and touring car type.

FRONT WHEEL BRAKES.

Brakes as brakes have reached a very high stage of development, but however smooth the brake is in action and however efficient it may be in the holding of the driving wheels, it is not possible to render the retardation a constant or determinable quantity. At all ordinary speeds modern hand and foot brakes will hold the driving wheels, even on a dry road, says George H. Cutbush, in Motor, but if the road surface should be wet or greasy, the adhesion may be halved or even less, and the limit of usefulness of the brakes is correspondingly reduced. The finest brakes in the world are useless if the adhesion between tire and road is lacking. When the stopping effort just equals the adhesion, the most effective retardation is secured, but directly this point is passed and the wheels slip, all further power is wasted.

Because two wheels are sufficient to take the drive for ordinary purposes (four-wheeled drives are employed for heavy work on rough surfaces by some leading makers), it does not follow that the same wheels will be sufficient to transmit the breaking effort. Rapid acceleration may be a good feature—albeit, it can be overdone—but rapid stopping is absolutely necessary, although, unfortunately, at times the adhesive limit prevents the car being brought to rest quickly enough to avert disaster.

With brakes on the front wheels as well as the back the distance in which a car can be pulled up under the same conditions

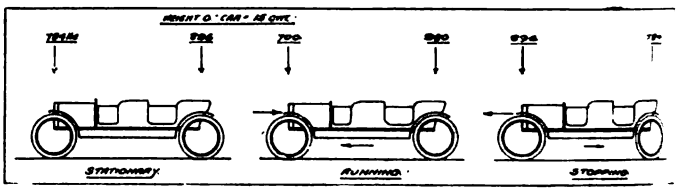


Fig. 1 shows the disposition of weight on a car of ordinary design when stationary, running and stopping, loaded.

of speed and road surface is halved—surely a state of affairs well worth securing. Some have an idea that, in any case, the brake power to be obtained on the front wheels cannot equal that obtained on the driving wheels, but this is a mistaken view. Certainly, the conventional car, fully loaded, carries a trifle more weight on the rear axle than the front when stationary. When the engine is propelling the car, a still greater proportion of weight is carried on the back wheels, but directly the brakes are applied the effect of inertia is to throw the weight forward, so that, with the usual disposition of chassis weights, front-wheel brakes at any speed are more efficient than those on the driving wheels.

If both systems are applied, the weights on the axle need not be considered, except that slightly greater pressure can be exerted on the front brakes than the back. For this reason, if any attempts are made to connect all brakes to a single control, it would be not be wise to adjust them so that the back ones come on first, as to do so would sacrifice efficiency. An ideal arrangement in this connection would be a cam control of some kind which would make it possible to apply greater pressure on the front brakes first, and then, as the car slowed, further depression of the pedal would divide the braking effort more equally over the four wheels. On the whole, pedal control for the front wheels and the usual side lever for the rear brakes would probably prove most useful, and is, indeed, the common practice.

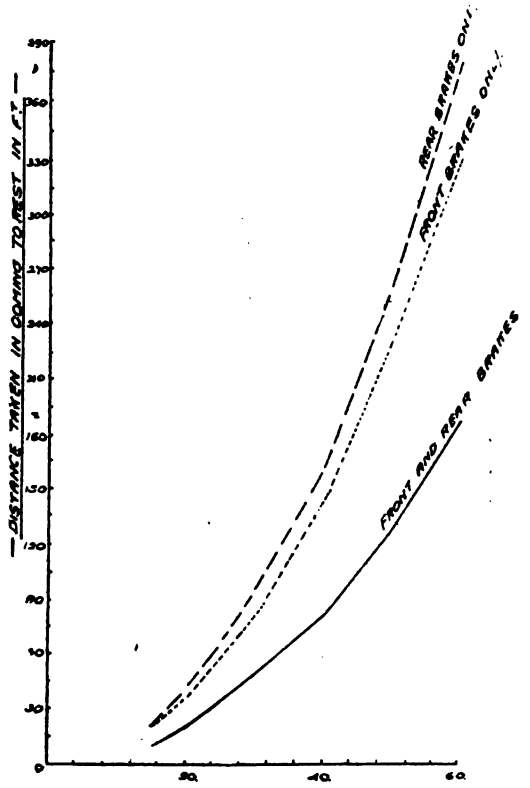
Braking and side-slip are points which must be considered together and one of the strongest claims of front-wheel brakes is their ability to reduce slipping. This has been the subject of repeated tests, and it may be considered as proved that front brakes on a greasy surface are very much safer than the usual method of application. Not only do they prevent side-slip, but, with a little experience, slipping, once started, can be corrected by judicious application of the front brakes.

The front wheels do not often slip, but, when they do, the

Digitized by Google

movement is extremely disconcerting, as all control over the direction of the car is removed. Braking on the front wheels might be thought to make this form of skid more liable to occur, but in actual use, such does not seem to be the case.

While front brakes are new to cars, it must not be forgotten that they have been in use on tricars for years past, and anyone with experience of these vehicles knows how much safer the front brakes are than that on the rear wheel. Application of the latter brake on a wet road often results in a sidelong slide into the gutter, but, despite the weight on the front the front brakes do not affect the steadiness of the vehicle. On a car, if the elementary principles of front-brake design are observed, the steering is in no wise affected. Compensation is essential; but, given this, the steering is the same whether the brakes are



applied or not. It is, of course, absolutely necessary for the centres of the steering pivots and of the brake-operating mechanism to be coincident, but this can be quite easily arranged. While stub axles are, as a rule, kept as short as possible, the fitting of front-wheel brakes will further encourage the bringing of wheel centre and steering centre together. The stub axle, at best, is an unmechanical detail, and it is remarkable that a centrally-pivoted hub is so little used. Such a steering wheel system gives the easiest possible steering and the strongest possible construction.

Certainly the necessarily-enlarged hub would mean large and heavy ball races, but some saving would be possible in the steering connections. Such wheels can be run without any tie rod at all, the one wheel automatically castoring with the other, but in any case the tie rod need be but of the lightest.

With such a hub front brakes would be ideal, but their fitting would not be quite so easy a matter as with the usual type of hub; still, extensions of the hub shell could, no doubt, be employed for the purpose quite satisfactorily. The chief objection to such hubs would be appearance, but this is a point which is not so important as formerly, and any device which means increased efficiency is now sure of attention, apart from its looks.

A very strong case can be made out for the front-wheel brakes on one point alone, and that is the removal of braking strains from the transmission. To the rear of the gearshaft is certainly a very convenient place to fit a foot brake, but it is contrary to engineering principles to apply a brake at the end of a shaft. It is not quite so unsatisfactory in practice as a brake on the flywheel, and no doubt the chief reason for its position is the fact that at the rear of the gearbox is the nearest point to the wheels at which a rigid foundaion can be obtained. To avoid unnecessary strain, a brake should be fitted as near the road surface as possible. A tire brake, for this reason, would be the best if tires were of steel instead of rubber, and as things are, the drum on the hub is the best way of applying the brake power. If compensation is to be avoided, the next best place is on the differential cage, but this, again, means of course, an addition to the dead weight of the axle.

There can be no doubt, however, that the transmission brake is ripe for supersession. In the first place, it is often anchored to a gear-box of aluminum; a metal unsuited to sudden strains or to high temperatures, but the chief objection to the gear-shaft brake is that the braking strain has to be taken by universal joints and bevel drive.

The result of these reversals in the direction of the stresses is that wear on both sides of teeth is produced, and universal joint bearings are worn on two sides instead of one, thus practically doubling the play in all these parts, which are peculiarly adapted for giving rise to those knocks so difficult to locate and correct. The braking strain is certainly very much less than induced by driving gear over any given period, but, against this, the former strains often greatly exceed those possible in driving.

ACCESSIBILITY A STRIKING FEATURE.

No one who visited the Garden show could help but notice that accessibility and automatic features were striking points in the new cars. As instances, in many cases the fan behind the radiator can be taken off without taking off the radiator, fan belts can be adjusted, the water pump can be examined without taking off the radiator, or the magneto itself can be taken out and replaced in a few minutes.

Pressed steel, or rather, stamped steel, running boards have displaced the old clumsy wooden running board; the usually dirty rubber mat for floor covering has lost favor and aluminum hat taken its place, especially that type having a roughened surface, which is stamped rather than cast.

Wherever gasoline tanks are not carried under the front seat or underneath the rear cross section part of the frame, where the pressure feed system is used, a new scheme seems to be that of placing the gasoline tanks back of the front seats, but of course made in an elliptical section, so as not to take up too much room in the tonneau, the idea being to carry the gasoline high, and thus get a gravity feed and do away with the need of a pressure feed. This system also makes the room under the front seats available for storage.

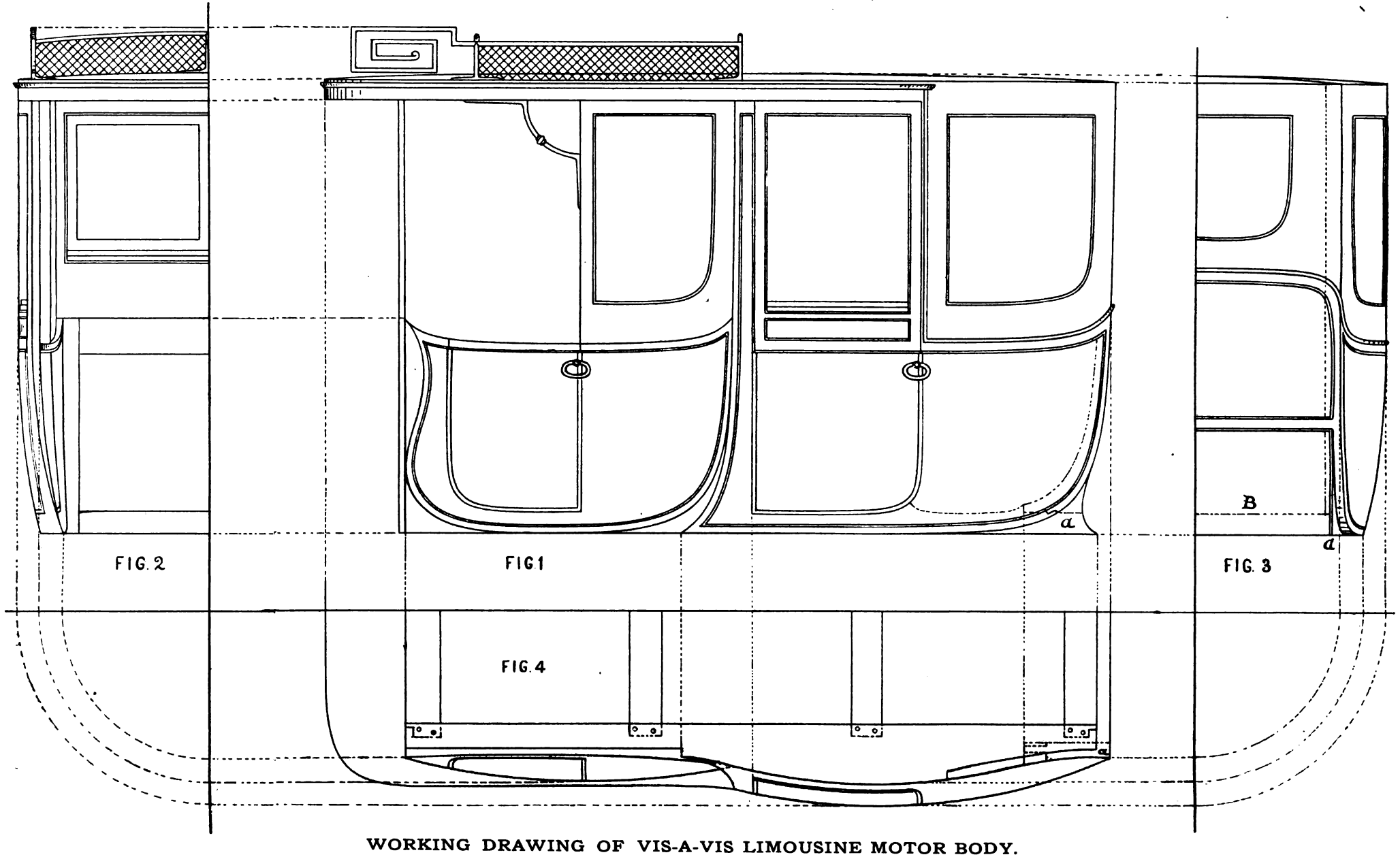
The thermo-syphon system of water circulation has not gained as much as its advocates expected. The phrase thermo-syphon does not indicate really the nature of the system and, like many other phrases used in automobile literature, a better one might be employed. Some experts think that thermo-syphon should be called heat circulation, for, as a matter of fact, the phrase indicates the natural influence of heat circulation. It is obvious that heat is the force acting on the water.

ON A TEN-HOUR SCHEDULE.

The Moline Wagon Company has inaugurated a 10-hour working schedule in its plant. The concern has been operating on a nine-hour basis for a short time, and the change will be welcomed by its employes. The company is rushed with orders and will commence running its plant 12 hours in a very short time, it is predicted. Indications point to a busy season.

The Rock Island, Ill., exposition managers intend to make the show largely an implement, vehicle and motor car exhibit next year.

Digitized by Google



WORKING DRAWING OF VIS-A-VIS LIMOUSINE MOTOR BODY.

(Described on opposite page.)

Digitized by Google

Body Construction and Finish

WORKING DRAWING OF VIS-A-VIS LIMOUSINE MOTOR BODY.

(Drawing on opposite page.)

In the working drawing herewith we give a design of vis-a-vis limousine body, which possesses striking up-to-date traits of linear progress. Fig. 1 shows the elevation design, the top and bottom quarters being vis-a-vis, and a departure in limousine construction. The back and front body quarters, as well as the top quarters, are fashioned in mail coach style, thus keeping the trend of the road carriage well linked in the fashioning of the motor, in its up-to-date progress. The front of the front top quarter is straight up, which is much better than being curved in hansom cab style, which some builders of limousines effect.

The lines shown in the drawing carry none of the meanness of the cab, but hold themselves erect with a dignified poise, as all motor carriages of character should.

The front body is fitted with windage door, kept well up to a protecting line from the suctional draught set up by the car's speed. The lines of the front body in its quarters, give a rich length of double curvature, while the corner pillar curve blends delicately into the bottomside side.

The hind body is designed with a long corner line from the pillar, and finely blending into the bottomside line, and allowing the coupe pillar to finish with a plinth bottom, thus giving a firm footing to its position from the body vertically. A rocker panel spacing is shown from the front of the coupe pillar to the corner pillar line of the body, the corner pillar bottomside being boxed back to show the rocker panel. The body door is made with rounding corner to allow its opening to miss the wing, while at the same time adding strength to the body pillar at its framing point to the bottomside. The windage door at the chauffeur's entrance is also corner curved for the same reason. The quarters and door spacing together with the solid and bold outline of the body conveys a noble dignity to the design.

On the elbow line, and pillar of the hind quarter, the position of the plated or metal bead is shown, and on the back section, Fig. 3 as well, metal beading is fixed to the elbow and pillar of the front quarter as well, but, of course, is jointed to the front line of the coupe pillar.

The canopy is supported with a curved strut stay, the roof is fitted with a luggage guard rail partitioned off in line with the top of the coupe pillar, though in many limousine roofs the rail is continued the whole length of the roof with centre partition, as well as the crosswise guard behind.

Fig. 2 shows the front half section as projected from the elevation, and the half plan, and gives the crosswise points of measurements of the body, at its widest point, its turnunder, across coupe pillars and front body position thereto. The windage guard light is not shown, but the body off by the coupe pillars.

The window frame lights lift up and down, as in an ordinary single brougham, or they can be made to slide past each other, or again, they can be made to hinge up to the roof, or hinged to hang at any double angle at which front lights are usually set. The section also shows the top and bottom cross bars of the front body, and the inside line of the framing.

Fig. 3 shows the half back section of the body, and the design of the mouldings as worked up in the solid from the framing. The line for the metal beading to run is also shown, and jointed to the elbow piece at a correct mitre angle. This is an important consideration in laying out the back rail moulding curve at the corners, for plated beading must be faultless in the jointing or it's a bad job. There is no alternative but that of a perfect joint, otherwise the whole job is condemned, and the finish completely spoiled.

The back light is made to harmonize with the quarter side lights in shape. There is one part in this section that requires clear explanation, and that is the rocker panel lettered on the elevation in this section and in the plan at A, A, A,; this also applies to the panel space in the front body at the coupe pillar.

The corner pillar and the bottomside are got out wide enough to allow of the rocker being boxed back to level with the panel line of the bottom quarter B. The panel is giggered into the seat crossbar, and the corner pillars and box checked into the rocker as shown. The plan entails careful work, but a good job is the result.

Fig. 4 shows the plan or "cant" of the body. The motor body has introduced a vast difference in body construction to that prevailing in horse-drawn carriages, though motor body work largely absorbs the constructional lines of the former, yet the lines of formation require a broader knowledge of the principles that comprise the plan of construction right through the science of coach body making.

The two sections of the body have independent base lines, the hind body side sweep takes the coupe pillar and top quarter, the turnunder line is projected to the plan from the back section. The points shown by the chain lines show the correct position on the plan of the points of the body, while the corner pillar is positioned from the corner of the elbow line to the turnunder line. The corner pillar must be framed to the bottom side to lay out at this angle, and thus in its position necessitates a cut under curving to run into the turnunder line. The position of the pillar in joint is shown in the plan, and also the boxing back of the bottomside to throw up the rocker panel at A, A, in the plan and elevation.

The plan of the front quarter is also shown in plain linear points of the framing position. The base line or side sweep points the front of the body and the position of the elbow on the inside of the front of the coupe pillar; the elbow is thus framed 3 in. in from the outer edge of the pillar, and individualizes the back and front quarters, thus relieving each other in their surfaces. The front plan simply shows the side sweep line, and the turnunder line, returned back to the elbow and front body points of the sweep, with the position of the door also shown.

To the practical body maker of experience in motor body work of high character, the draft is all that is necessary for the points of construction.

The body herewith is not only an up-to-date design in limousine work, but an advance upon those in the van of fashion as brought together at representative exhibitions bidding for the world's favors. The subscribers to The Hub are therefore kept well posted in up-to-date and progressive motor body design.

The sizes for building are: Length of body on chassis, 7 ft. 11 in.; width of hind quarters on elbow line, 26 in.; width of top quarter, 26¾ in.; width of door, 23 in.; width of front elbow on elbow, 21 in.; width of top quarter to front of coupe pillar, 21½ in.; width of door, 18 in.; width of quarter from hinge pillar to dash, 6 in. Depth of hind quarter on pillar line from elbow elbow over bottom side, 25 in.; depth of top quarter from bottom of elbow to roof over all, 37 in.; depth of back quarter light, 25½ in by 20 in.; depth of front light 25½ in. by 16 in; width of back light, 26 in. by 16½ in.

Width of body at back, 40 in.; width on chassis point at rocker, 38 in.; width over standing pillar, 52 in.; across front coupe pillars, 48 in; width across front quarter at elbow point, 42 in.; across pillars, 46 in.; across front, 40 in.

Digitized by Google

REPAIRING A "BLOWOUT" OF A TUBE.

The term "blow-out" as used in automobile vernacular, means a leak from some cause, puncture or otherwise, of the tube. By the tube is meant the inner rubber vessel, which is inflated to cushion and lend resilience to the outer part, which is called either tire or shoe. The repairing of a blow-out is only an ordinary piece of work when one gets to it or gets the tube in a position to do the work.

Taking it far granted that many who read this chapter of instructions are neither experts nor over-conversant in the matter of what pertains to auto repairs, the whole matter will be gone through with in detail that the uninformed may proceed from start to finish in an understanding manner. Groping in

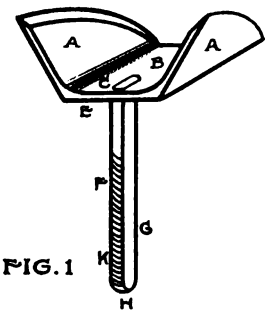


FIG. 1

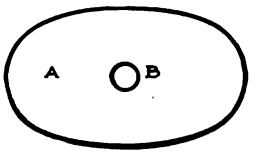


FIG. 2

the dark and guess work are left out of the case altogether. Useless matters will not be treated or dealt with.

The tube is endless, and when inflated is in its length cylindrical, see Fig. 4, which is a section of one showing A, its outer part; C, its chamber or inner part; D, outline of air valve, with B, its confluence with the tube. There are two metalic tires, the flat one, which encircles the rim and the recessed channel iron, which is secured to the plain metal tire, for a brief understanding of which section of same see Fig. 7. A, base of which rests on the flat iron tire; B, the portion of which the flanges of shoe rest on and are secured to; C, C, are the recesses into which the flanges of the shoe are forced and held by means of the shoe lugs, of which Fig. 1 is a cross section, the duties of which are to form a compress on the flanges of the shoe and hold them solid in the recesses and on the base. With this brief preface we will now proceed with the matter as per the title.

In order to keep in the right track we will explain each part as we move along. The first thing to be done is to loosen the nuts on the tire lugs of which there are four, the stem or bolt section of which pass through the metal tire and rim at equal intervals. By a proper loosening of the lugs we relieve the flanges of the shoe from compress and are then enabled to insert what are termed tire irons for which see Fig. 6, explained in season.

The story of the tire lugs had better be told at once for then we know just where to put them when ready. Fig. 1 shows a

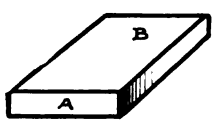


FIG. 3

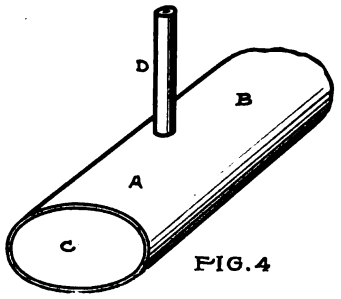


FIG. 4

partly cross and half section of one. A, A, are lips or ears, the press on A, A, Fig. 8. F is the bolt. G shows one of the sides, outer portion of which form the compress on the flanges of the shoe, B, B, and C, C, (Fig. 8). These also, with B, form the recess for the tube to rest uninjured, and, as will be noticed, the same are rounded or void of sharp corners with a view to not injuring the tube. E shows the flat part which forms a comboth of which are flat. K shows threaded part and is alike on the opposite side. Making the two sides flat is to prevent its turning. H is the rounded point. It is threaded from point to within one inch of its entire length. The flat faces are about one-fourth of one inch. The mean diameter is ⅜ inch and larger, according to height of wheel and weight of car.

To prevent wasting too much metal in thread cutting it is the custom to cut about 20 threads to the inch. The custom is to use brass or composition nuts, six sided, with a circular rim which prevents cutting in the wood rim. The brass nut does not oxide and consequently can always be readily removed. With a nut one inch thick there is such a thread bearing it would require much force to strip either thread of bolt or nut.

It is the custom to stamp out oval plates and shape them or use malleable cast plates shaped, either of which has a square hole as per C, Fig. 1, which shows where the same are riveted in. A better way is: stamp or cut out oval plate as per Fig. 2, A, the plate; B, a hole into which insert a bolt and weld in and shape afterwards in a proper shaped tool. This method avoids a hard projection for the tube to work on and become weak. In cutting out the plates do the same with the "turnups," A, A, are with the length of the iron to prevent breaking.

To prevent any injury to the tube make the edge all way around as per Fig. 8. B, the plate. A shows a rounding bevel edge. To prevent oxidizing give the flanged part of the lug not less than two coats of lead paint—or, if handy, nickel the same. When dry cover the same by glueing on pieces of heavy twilled drilling—muslin. Cover the outer part first, then the inner part, allowing it to lap over the outer part. When properly set cover with one good coat of lead paint.

After we have loosened the lug nuts we take off the cap of the air valve and with a proper tool or piece of brass wire, bear down on the valve and let out all the air which will flow. We now begin with the tire irons, Fig. 6 A, the chisel pointed hook and B, the part next it of the same width and thickness. C, the straight flat and with chisel point D. E, rounded hand piece. These are known as the standard tire iron; in width at flat

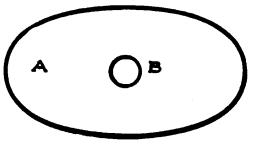


FIG. 5.

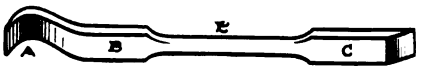


FIG. 6

parts about half an inch more or less; in thickness 3-16 inch; from 14 to 20 inches in length. It is well to have two or more.

Insert the straight end until you can get in the hook end, with which you pull out the tire as fast as it is clear. To repair the tube or to insert a new valve it is necessary to remove but one side of the tire. To put in a new valve or reinforce at the base it is only necessary to remove the tire enough to get the tubes out far enough to do the work. After the lugs are all removed, or so placed as to not injure the tube, remove the same.

After the tube is removed find the hole. If not readily discernible inflate a little and insert in water when the escaping air will at once locate the leak. As soon as dry lay the tube on a clean flat surface and with well worn 00 sandpaper remove any dirt or foreign substance that may be on the tire at the leak, also clean off the patch on the side you intend to apply the same to the tube. Dust it off with clean brush. Apply to the tube (size of patch) gasoline and serve the patch the same. This is done to soften the rubber and permits of a better weld. Now apply cement to tube and to patch. Apply patch to tube and place the same between two boards with smooth, even surfaces and place in compress for twelve hours—over night is the custom.

Rubber patches may be had as follows: 1½ inch diameter, 25c per dozen; 2½ inches, 50c per dozen; oval 1⅜x3⅜ inches up to 3½x7 inches at from 60c per dozen to $3.50 per dozen. All with bead or feather edges. For further remarks on this see conclusion of chapter.

Digitized by Google

When the tube is ready, insert into place and inflate just enough to keep it out of danger. Then put in the lugs and be positive that they do not pinch or injure the tube. Now place the shoe by pushing in the flange, using the tire irons and when in place tighten up on the lugs and inflate the tube. The value of the lugs is, Fig. 8, A, A, base of shoe flanges; B, B, inner bends; C, C, outer bends. As soon as the lugs are in position and are being put in proper position there is a compress—of A, A, and B, Fig. 1, on A, A, B, B, and C, C, Fig. 8, which places the same in an almost immovable position.

It occasionally occurs that the valve in connection with the tube—Fig. 4-A, tube; D, valve. B, confluence or juncture of valve and tube, C hollow of tube)—become loosened or broken loose from the tube. To repair this injury clean and prepare as for plain patch. Then prepare oval patch as per Fig. 5, A, patch; B, hole, in same to pass over and around valve. The hole is smaller than the valve. When cement is on both place the patch in position, first having a block of wood prepared to allow of a proper compress—the same as with the plain patch. Allow to remain in compress over night. After the pressure is removed from a patch or puncture a little talcum powder is a good application. When tubes are exposed too much to the outer or normal atmosphere they begin to deteriorate, that is, the rubber does. Kept in cases with a good supply of talcum powder they will hold to their original state for a yerv long period.

There is a large variety of what are termed "tire irons,"

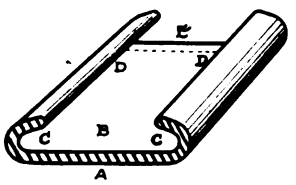


FIG. 7

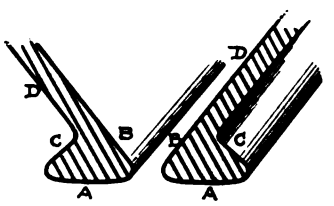


FIG. 8

"tire drags," etc., of more or less value with each of which are instructions for general use and varying in price, all which would prove serviceable to those not far advanced in the trade. One set of three pieces at $2.50 appears to be of great utility.

For large rents in tubes a heavy grade of sheet patching rubber can be had of supply houses. This will serve for channels with detachable rims.

The writer suggests the keeping of this chapter on file for ready use because he does not remember having seen published so much on this subject in one chapter or so perfect in each detail, which makes it all the more valuable.

CREDITOR SUES BUICK FOR $100,000.

The Wetherill Finished Castings Co., of Philadelphia, on January 25th, instituted action in Detroit against the Buick Automobile Co., of Flint, Mich., for $100,000, amounts claimed to be due. Writs of garnishment were immediately served on four banks in which Buick funds are deposited.

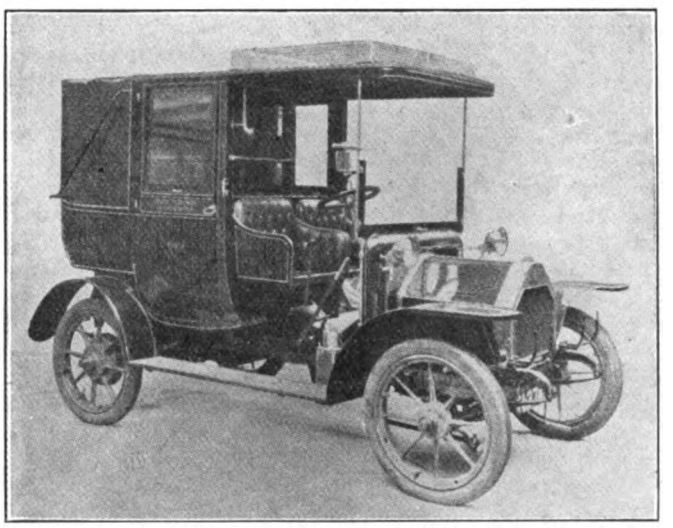
Carrying out a threat which had been made after the Wetherill people became pressing in their demands, the Buick company in turn instituted proceedings against the Wetherill company for the recovery of $250,000 damages claimed to have been sustained by reason of the Philadelphia concern's alleged failure to make deliveries according to contract, and also because the goods were not up to the required standard. The Buick account was some four months overdue and all other efforts failing, one of the Wetherill principals recently went to Michigan to enforce collection or know the reason why; the suit is the outcome of the visit.

The Buick company is the chief cog in the General Motors "trust" project and it was its demand for four months' credit that caused some thirty material and accessory manufacturers to meet in New York to consider the demand. The conference resulted in a decision not to take the risk involved and the credit was refused.

STEEL TIRES FOR MOTOR CARS.

From an English source we note and illustrate the application of steel wheels to motor cabs. We learn also that this type of wheel is being tried out with favorable results by the London Omnibus Company.

The wheel is cast in one piece, and its satisfactory characteristics are largely due to the extreme care which is taken in the annealing process, to which these wheels are subjected. The tire



Motor Cab Fitted With Atlas Wheels.

rim is forced direct on to the steel wheel rim. The spokes are made of cross, T or tubular cross-section. Detachable rims are also supplied. In this form of construction the rim of the wheel is made of channel section and is suitably arranged to accommodate the security-bolt wing nuts.

TORPEDO BODIES.

The only puzzle is that this type of coachwork has taken so long to evolve, for there is not a word to be said in favor of low side dors to either front or rear seats, while the usual gap between the dashboard and the steering wheel is simply designed for the admission of rain, says the Autocar. At the same time not every design of torpedo body is either efficient or handsome, and we wish to put buyers on their guard against several pitfalls which await the designer of such carrosserie.

Certain photographs recently published show that a body with high flush sides and two pair of full-sized doors looks abominably squat and lofty on a short chassis. It reminds us irresistibly of the small boy's Tate sugar box mounted on rollers. In all cases the height of the sides must be strictly proportioned to the length of the chassis; the longer the chassis, the higher the body may be; the shorter the chassis, the lower must the sides be kept, and consequently the bigger the rake needed for the steering column. From our experiments we should estimate that a 9 foot chassis is the shortest to which a torpedo body can be sensibly applied, and with a chassis of this length the rear seat will be forced out backward till it is directly over the back axle—which spells bumpiness, however excellent the springs. A 10 foot chassis is certainly preferable.

Again, it follows that if the steering column be steeply raked backwards, the scuttle dash must be much deeper, or else it will fail in its purpose of protectng the driver's legs, and he will continue to require a driving apron or rug. The side doors of the front seats interfere with this necessary deepening of the scuttle, as their front hinge must come near the dash, and the rear edge of the scuttle must overlap this hinge considerably. There is no need for the scuttle to be fixed all along its side edges—a well made bevelled joint resting lightly on the top of the side doors when closed is quite practicable.

Two further difficulties present themselves at this juncture.

Digitized by Google

The dashboard of most cars continue to be the repository of a host of fittings, some of which demand manipulation by the occupants of the front seat while the car is in motion, and others ought to be at any rate comfortably visible. The hand pressure pump for the gasoline supply comes in the first category, and drip feeds come in the second. Unless care be taken, all these fittings will be rendered somewhat inaccessible by the fitting of the torpedo body on a shortish chassis. The hand pressure pump may be fitted to the underside of the scuttle. The oil force pump may well be separated from the drip feed box, or other lubrication indicator, and be mounted in the usual racing position, i. e., vertically against the front of the boot under the driving seat. The drip feeds should be fixed on a block projecting from the dash proper, so as to bring them nearer to the driver.

The second difficulty is the placing of the fuel tank. Most cars continue to carry their tanks under the front seat—a position that is never convenient, and which is rendered impossible, if the seat be low. The tank must therefore be combined with the dash, or set at the rear and fed by pressure.

The whole of the points dealt with so far relate to designing a torpedo body for a short chassis. There is another point affecting its use on longer chassis. It is the rule in all torpedo coachwork to build the seats lower than with the standard side entrance coachwork. Many coachbuilders fail to realize that if the seats be low, the angles of both seat and back rest must be altered. A low seat with a vertical back and a flat floorboard is horribly uncomfortable, and care must be taken to tilt both the cushion and the back of the seat slightly over towards the rear. Even when this is done a sloped footboard is really desirable for maximum comfort.

If these points be attended to carefully, the torpedo sporting phaeton is the most efficient and comfortable body procurable for chassis of 9 feet and over. A bastard type of torpedo is possible on still shorter chassis, if entrance to the rear portion be obtained by a wing seat; but these bastard torpedoes cannot look anything but ugly, for the projecting backs of the two seats are squeezed tightly together towards the back of the car, and utterly spoil the aspect of the car's proportions, because of the abnormal length of the fore body.

AVIATION NOTES.

Under the auspices of the Aero Club Havrais and the Aero Club de France there will be held at Havre in 1910 a meeting of flying machines, international in scope, and intended to be one of the most noteworthy yet attempted. No date has yet been decided on, but the committee appears to favor the last fortnight in September. This will be arranged in conformity with other important meetings in 1910, and notably with the international meet in the United States. Among the prizes to be offered there will probably be one of $40,000 for the best flight across the estuary of the River Seine from Havre to Trouville and return. The municipalities of Trouville and Deauville will join with that of Havre in lending official aid to the program. The Seine flight is about eight miles straight away from Havre to Trouville. The meet will apparently offer a good opportunity to American aviators and manufacturers.

Apropos of the appropriately designed outline of his monoplane in stonework that has recently been placed on the spot where M. Bleriot landed above Dover, by the Aero Club, it is interesting to note that the French Aero Club proposes to erect a monument at Bagatelle, on the spot where M. Santos-Dumont made the first flight on a heavier-than-air machine so long ago as the end of 1906.

So far as one may judge from an illustration of an article which speaks for itself, quite the best aeroplane fitment is the new semi-saddle-shaped aviator's seat which has just been introduced in England. This seat is made of leather, riveted to a light yet strong steel frame, and is fitted with a semi-circular back rest, formed of a light steel band covered with leather. The whole device looks like providing the greatest comfort and security for the aviator, while in no way hindering his ease of control.

The Lunel monoplane—which, although successful enough at Issy, has merely risen clear of the ground at Wembly—is of the Bleriot type, the difference being that the planes are rather broader from entering edge to back, that the framework of the fore-carriage is heavier and fitted with sledge runners in front of the wheels, and that the elevator plane is rocked by sliding the shaft of the steering column up or down, Voisin-fashion. There is also a small fixed feathering plane on either side of the fusellage—which latter is very strongly built—just in front of the elevator plane. Otherwise this appearance of extra strong construction is the most general feature of the Lunel monoplane, which is not fitted with a three-cylinder Anzani 50 H.P. motor and a Dargent two-piece propeller.

HEADQUARTERS TO BE REMOVED TO BUFFALO, N. Y.

The headquarters of the Carriage and Wagon Workers' International Union are being moved from Washington to Buffalo, N. Y.

This action is pursuant to an order adopted at the recent convention of the organization. The offices of the union have been located in Washington a long time, and the removal is due in a measure to the change in international officers.

Lewis F. Maire of Atlanta, Ga., was elected president, and William P. Mavell, of Buffalo, was chosen as secretary-treasurer, succeeding John H. Brinkman, of Washington.

DEATH OF HENRY HAAGER.

Henry Haager, manager of the Buffalo branch of Wm. Harland & Sons, Varnish makers, was found dead early in January in the lavatory of the plant with a bullet in his right temple, self-inflicted. Mr. Haager was 38 years old and came to this country from England over a year ago. His wife and two small children survive.

HANKINSON PLANT DESTROYED.

The wagon jack factory of J. V. Hankinson at Franklin, O., was totally destroyed by fire in January. Mr. Hankinson is temporarily unable to fill orders. It is probable that the factory will be rebuilt.

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, 5 cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

SITUATIONS WANTED.

Wanted—Position as superintendent or blacksmith foreman in buggy or carriage factory by a young man of wide experience as I wish to make a change. Am practical mechanic and cost reducer; am in the race for economy and producing. Best of references as to ability, honesty and sobriety if required. Address A. H., care The Hub, No. 24 Murray St., N. Y.

FOR SALE.

For Sale—No. 1115 Singer Sewing Machine, with 30 inch arm in the clear; a crackerjack for sewing celluloid lights in curtains, dashes, etc. Address Henney Buggy Co., Freeport, Ill.

WANTED.

Wanted—First class all round carriage trimmer. Steady employment. Address D. H., care The Hub, No. 24 Murray St. N.Y.

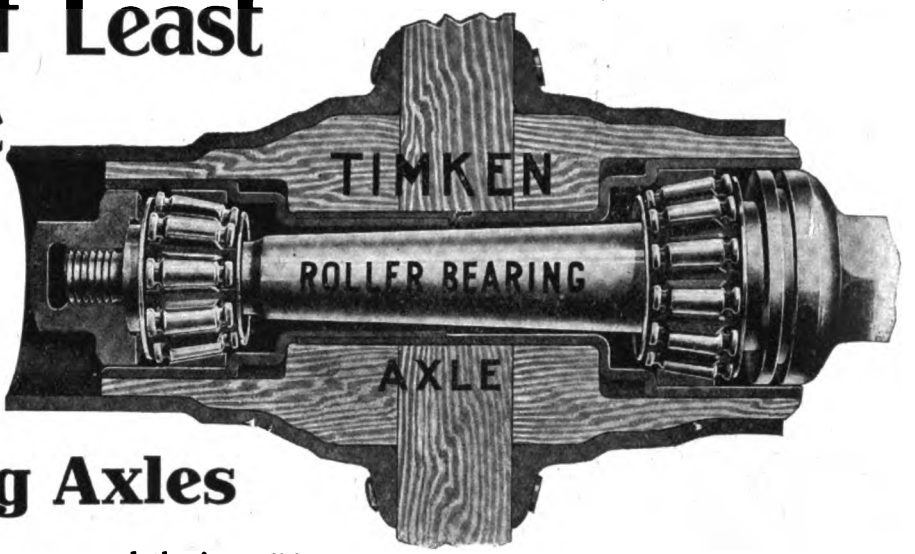
PATETNTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 608 F St., Washington, D. C. Established 1883. I make an investigation and report if a patent can be secured and the exact cost. Send for full information. Trade-marks registered.

Digitized by Google

The Line of Least Resistance

is always the line to follow, whether it is building, selling or using vehicles.



TIMKEN
Roller Bearing Axles

not only makes hauling easier for the user—and that's a talking point in selling—but makes selling easier and that means PROFIT to you.

Timken Roller Bearing Axles

have proven through years of use and experience by the largest makers and users of horse-drawn vehicles to not only reduce the draft 50 per cent., but earn on commercial trucks as high as 500 per cent. on the amount they cost and

ARE GUARANTEED FOR TWO YEARS. CATALOG AND PRICES FOR THE ASKING.

THE TIMKEN ROLLER BEARING CO.

Branches
10 E. 31st Street, New York
429 Wabash Avenue, Chicago, Ill

Canton, Ohio.

Cover a carriage top with MERITAS enameled oil cloth—cover another with any other kind—follow them up and see how long the tops last.

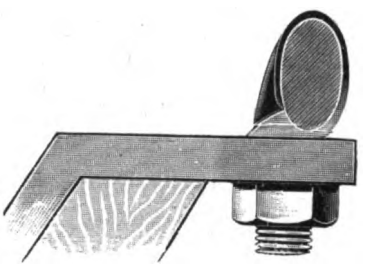
MERITAS will be in good condition long after the other has been caked, cracked and weather-killed.

Try it—then stick to the kind that lasts the longest.

Look on the back of the goods for our trademark.

See Your Jobber.

Standard Oil Cloth Co.
320 Broadway, New York

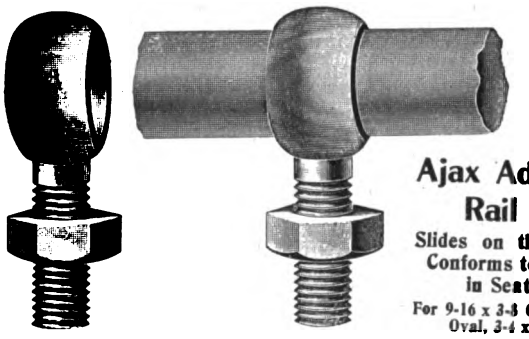


ALLEN'S ADJUSTABLE RAIL NIB

PATENTED

Readily Adjusted Absolutely Secure

For 9-16 x 3-8 Oval, 5-8 x 3-8 Oval, 3-4 x 3-8 Oval



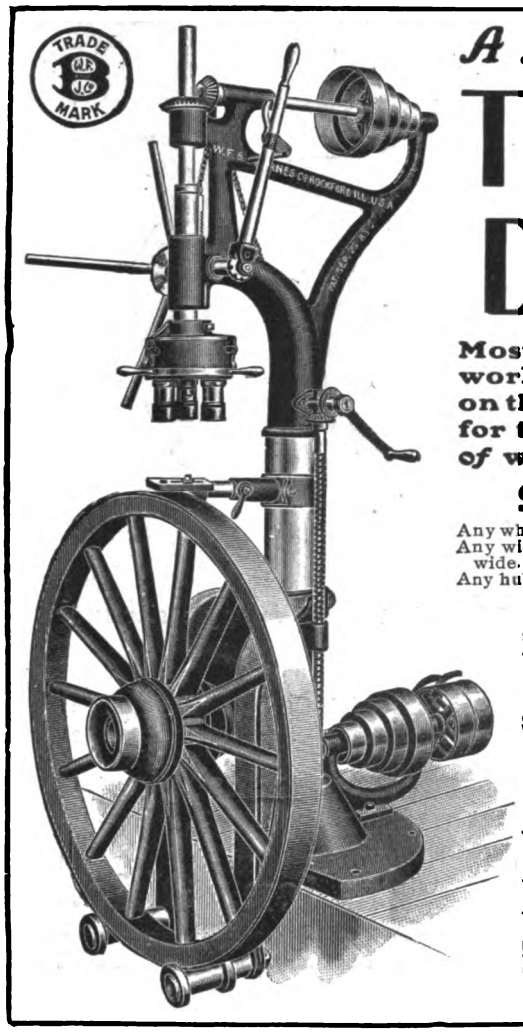
Ajax Adjustable Rail Nibs

Slides on the Oval and Conforms to variation in Seat Irons.

For 9-16 x 3-8 Oval, 5-8 x 3-8 Oval, 3-4 x 3-8 Oval.

CORTLAND FORGING COMPANY
CORTLAND, N. Y.

Digitized by Google



A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

Bolt Clippers
Everett, Mass., U.S.A.
H.K. PORTER

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

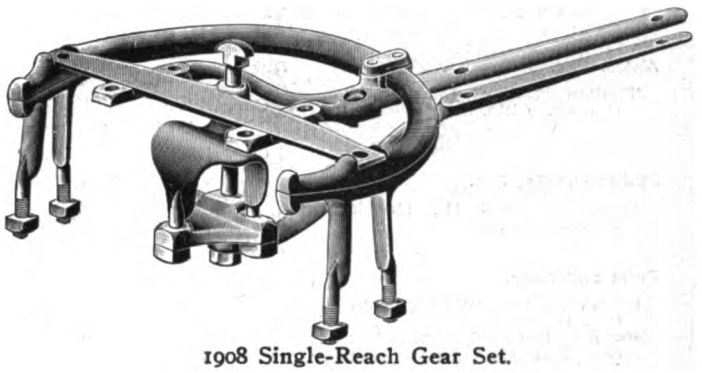
Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.
745 THIRD AVE., BROOKLYN, N. Y.

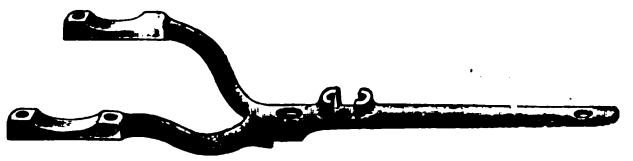
INDEX TO ADVERTISEMENTS.

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.



Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

Our Carriage or Spring Edge Cushion Frame

Is not an Experiment, but has been tried and stands the test. We would like to quote you prices.

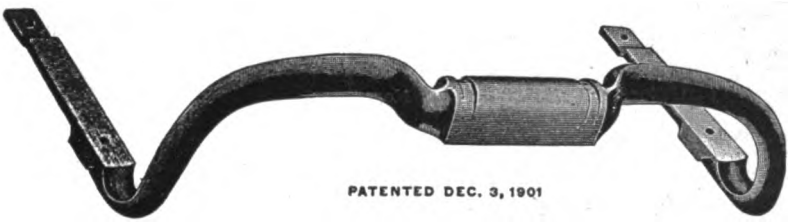
NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.



THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market. For further information, address

The KEYSTONE FORGING CO., Northumberland, Pa

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges

EXCLUSIVELY FIRST-CLASS WORK

THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Please mention "The Hub" when you write.

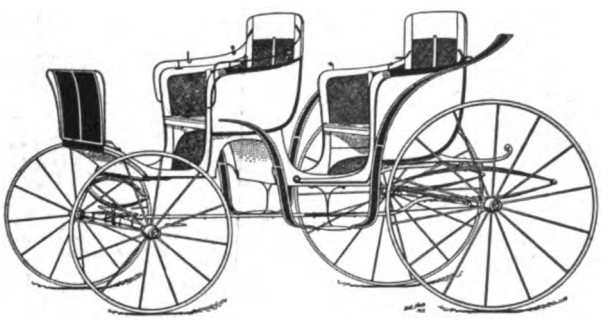
Digitized by Google

Vehicles in the White

WITH TRIMMINGS OR WITHOUT
THAT'S THE WAY WE MAKE THEM

GREATEST VARIETY OF STYLES ON THE MARKET.

AUTOMOBILE BODIES A SPECIALTY



OUR LINE OF GEARS WILL INTEREST YOU.
MORE THAN FIFTY DIFFERENT STYLES.

WRITE FOR OUR CATALOGUE.

Schubert Bros Gear Co.
ONEIDA, N. Y.

Brazil Leather

FOR AUTO BUGGY TOPS

SEAT AND BACK SPRINGS,
COTTON, NAILS, WADDING,
MOSS, TACKS, WASHERS,
HAIR, BUTTONS, REEDS,
REED MOULDING,
CLINCH BUTTONS

G. H. Lounsbery & Sons
Cincinnati, Ohio

The Tires for Satisfaction

Goodyear Wing Carriage Tires and Goodyear Eccentric Cavity Cushion Tires with canvas guides are tires that wear—that give satisfaction and increase the dealer's trade.

For all GOODYEAR tires are made of new, pure rubber, not of reclaimed "rubber" from the junk heap, nor any low grade. They sell easily because they save the user money—which pleases him—and he tells his friends.

Write today for free booklet showing how Goodyear Carriage Tires are built. Ask for sample section.

THE GOODYEAR TIRE & RUBBER CO., Canal Street, Akron, Ohio

Boston	Philadelphia	Cleveland	Buffalo	Denver
Los Angeles	New York	Chicago	Detroit	St. Louis
Cincinnati	San Francisco	Pittsburg	Atlanta	Washington

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.
Timken Roller Bearing Co., Canton, Ohio.

Bodies, Seats, Etc.
Woodman, Joel H., Hoboken, New Jersey.

Bolts and Nuts.
Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.
Wiese & Co., Wm., New York City.

Carriage Forgings.
Cortland Forging Co., Cortland, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.
Gifford & Son, John A., New York.

Carriage Goods.
Cortland Forging Co., Cortland, N. Y.
English & Mersick Co., New Haven, Conn.
Gifford & Son, John A., New York.
Herbrand Co., The, Fremont, O.

Dashes, Fenders, Rails, Etc.
McKinnon Dash Co., Buffalo, N. Y.

Fifth Wheels.
American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Jacks.
Hankinson, J. V., Franklin, O.

Lamps.
Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Machinery and Tools.
Barnes Co., W. F. & John, Rockford, Ill.
Porter, H. K., Everett, Mass.

Miscellaneous.
Standard Oil Cloth Co., New York.

Props and Bow Sockets.
Crandall, Stone & Co., Binghamton, N. Y.

Rubber Tires.
Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Swinehart Climber Tire & Rubber Co., Akron, O.

Shaft Couplings and Anti-Rattlers.
Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Metal Stamping Co., New York City.

Springs and Gears.
Fitch Gear Co., Rome, N. Y.
National Spring and Wire Co., Albion, Mich.
Spring Perch Co., Bridgeport, Conn.

Trimming Materials.
Stevens & Sackett Co., New Haven, Conn.

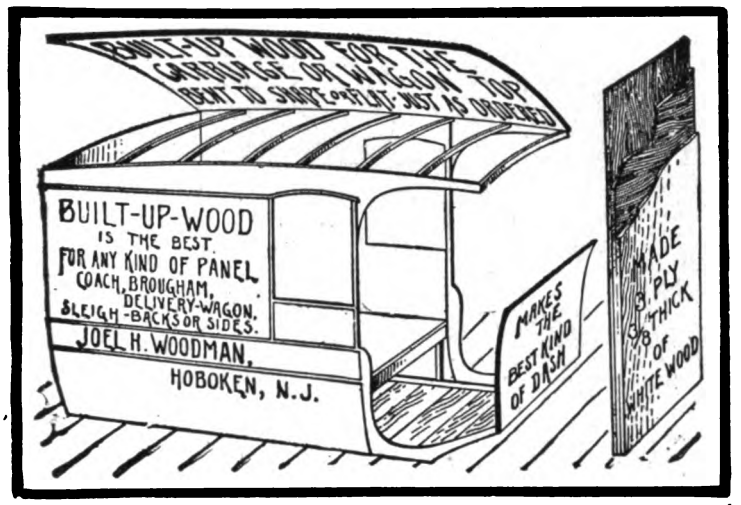
Varnishes, Paints and Japans.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Masury & Son, John W., New York and Chicago.
Louderbach, A. E., New York.
Manders Bros., Wolverhampton, England.
Moller & Schumann, Brooklyn, N. Y.
Pierce Co., F. O., New York.
Smith & Co., Edw., New York.
Standard Varnish Works, New York City.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

Wheels.
Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.
Union City Wheel Co., Union City, Ind.

Wheel Stock, Bent Wood, Etc.
Crane & MacMahon, New York.
Tucker Wood Work Co., Sidney, O.

Please mention "The Hub" when you write.

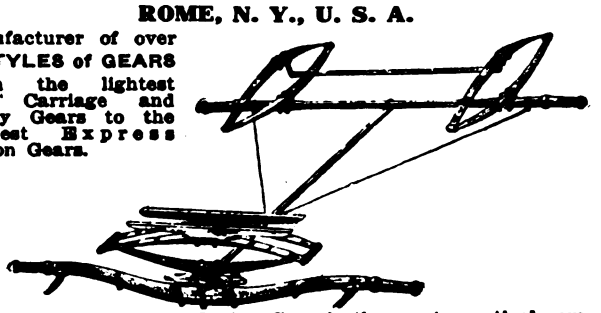
Digitized by Google



FITCH GEAR COMPANY

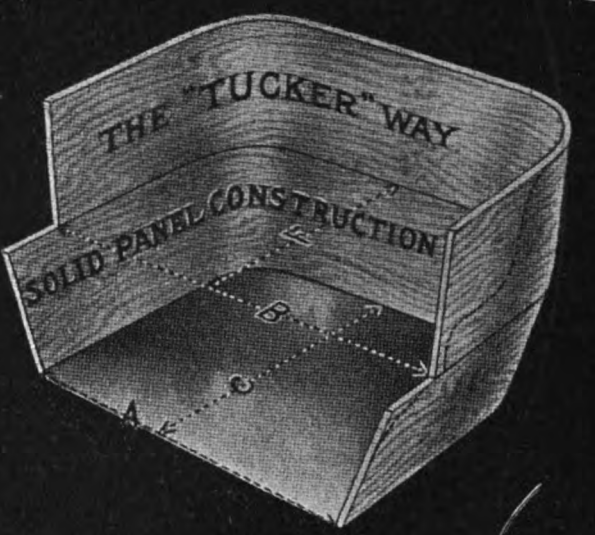
ROME, N. Y., U. S. A.

Manufacturer of over 40 STYLES of GEARS From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.



The Double Elliptic 3-Spring Gear is the most practical combination business and pleasure gear on the market, and is equipped with Wrought or our Common Sense Short Turn Fifth Send for our No. 24 Catalogue.

SOLID BENDINGS



MAKE FAULTLESS SEATS

CATALOG "H" SHOWS SIZES
WRITE FOR IT
THE TUCKER WOODWORK CO. SIDNEY, OHIO.

American Harness and Saddlery Directory

FOR 1910 IS NOW BEING PREPARED

It is the most accurate and complete edition that has been published

Trade News Publishing Company

24-26 Murray St., New York

THE list of the **WHOLESALE** and **JOBBING TRADE** is so arranged as to make it convenient to separate the association members from those not so recognized.

The **RETAIL HARNESS MAKERS** of the United States and Canada comprise the principal part of the Directory, arranged by State, Town and County, and in the large cities, the street and number is given. Those rating (approximately) over $1,000 are marked.

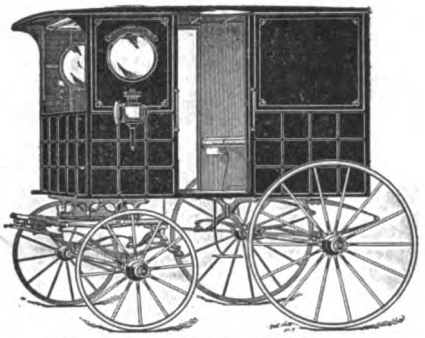
A list of **HARNESS DEALERS** as distinguished from retail harness manufacturers, is also given. The value of this list to those who solicit the vehicle, implement, hardware and department stores will be readily appreciated.

THE BUYER'S GUIDE is a valuable as well as unique feature. It contains an alphabetical classification of all the many and various articles made to sell to the trade, and the names of those making the various articles.

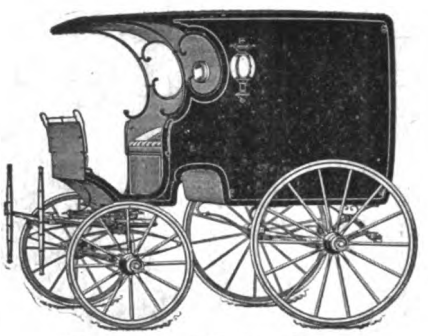
A list is also published of Export Commission Merchants, giving the class of merchandise they handle.

THE PRICE OF THE DIRECTORY IS $4.00, PAYABLE IN ADVANCE.

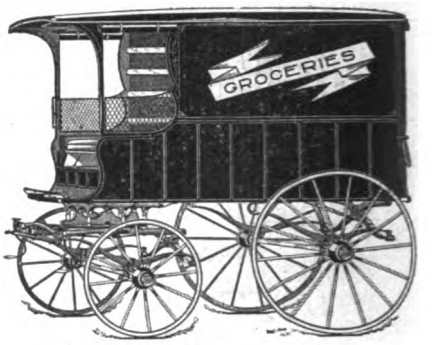
Digitized by Google



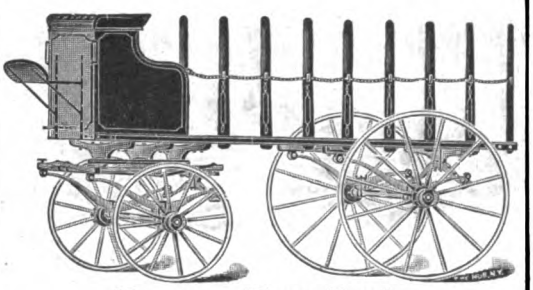
No. 112.—Milk Wagon.



No. 111.—Altman Wagon.



No. 113.—Grocery Wagon.



No. 122.—Flour Truck.

Electrotypes

of the vehicles presented on this page will be forwarded on receipt of

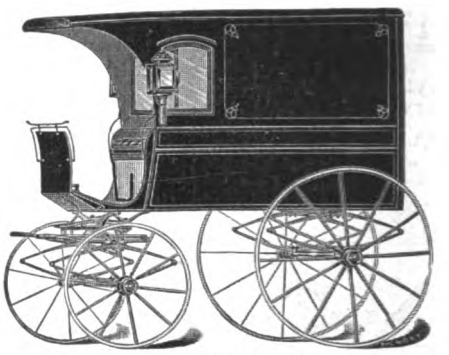
75 cts.

for each cut, to any address. Postage prepaid.

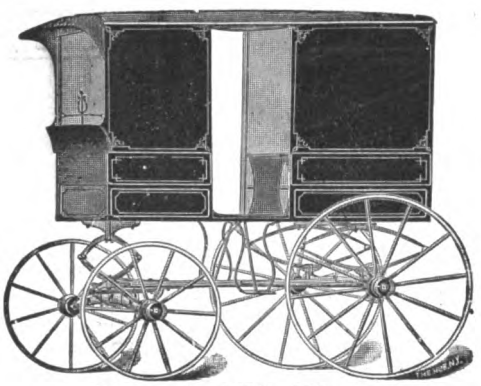
Catalogue

containing nearly 200 illustrations of carriages, wagons, sleighs, and miscellaneous cuts will be sent upon application.

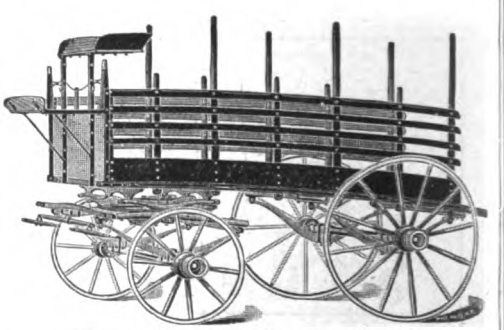
Trade News Publishing Co.
24-26 MURRAY ST.
NEW YORK



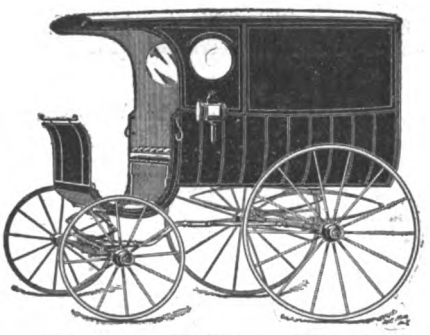
No. 115.—Delivery Wagon.



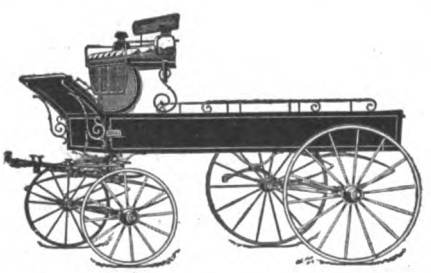
No. 116.—Milk Wagon.



No. 117.—Merchandise Truck.



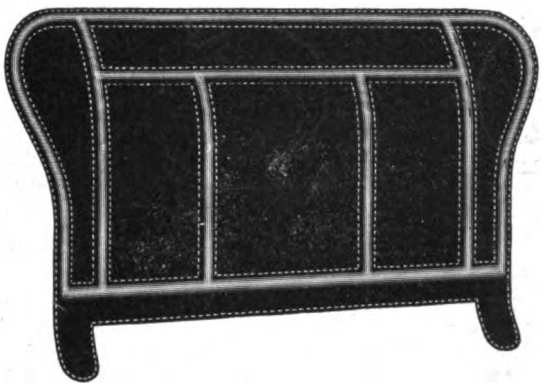
No. 114.—Delivery Wagon.



No. 124.—Delivery Wagon.

No. 118.—Ambulance.

Digitized by Google



HIGH GRADE

Dashes and Fenders

THE INDIANAPOLIS DASH CO.

INDIANAPOLIS INDIANA

ESTABLISHED 1886.

Correspondence School of Carriage and Motor Carriage Drafting

A thorough, practical tuition is given through this correspondence school. The theory and practice of construction, bookkeeping, perspective. Many men now hold good positions through taking the courses of instruction.

Principal, THOS. MATTISON,
Hillside Avenue, Bitterne Park,
Southampton, England.

Author of "The Coach Body Makers' Guide," $3.00; a practical treatise on "The Suspension of Carriages," "Bookkeeping," and other carriage building works.

Carriage Mechanics

Desiring to improve their present Condition should attend the

TECHNICAL SCHOOL

FOR

Carriage Draftsmen and Mechanics

SUPPORTED BY THE

Carriage Builders' National Ass'n.

The object of the School is to teach men to design vehicles and make working drawings, and to otherwise facilitate their work in the shop. Only those men employed in carriage or automobile building or their accessory trades are admitted to its privileges.

The classes are conducted in three divisions, viz.: Corresponding, Day, and Evening. The former is open during the entire year, while the day and evening classes are in session only from October 1st to April 1st.

The tuition is moderate.

For prospectus and full particulars, write to the instructor,

ANDREW F. JOHNSON,
18 West Forty-fourth St.,
NEW YORK CITY.

JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

The George R. Carter Co.

Manufacturers of

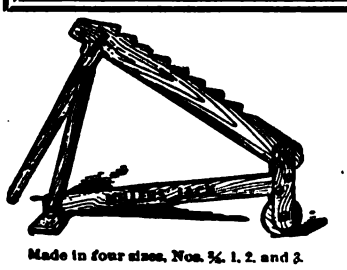
AUTO STRAPS A ESPCIALTY

CRANK STRAPS, HOOD STRAPS, TOP STRAPS AND TOOL BOX STRAPS.

JOBBERS IN

TRIMMING LEATHER, TOP LEATHER, LEATHER CUT TO PATTERN FOR CUSHIONS OR TOPS,
SHAFT LEATHERS, SHAFT STRAPS, POLE STRAPS, ETC.

CONNERSVILLE, INDIANA.



Made in four sizes, Nos. ¾, 1, 2, and 3.

JACKS FOR BUGGIES AND WAGONS

Miller Patent Wagon Jack
Made by

J. V. HANKINSON,

Successor to THOS. MILLER,
FRANKLIN, OHIO.
Write for particulars and prices.

Richard Eccles Co., Auburn N. Y.

Manufacturers of

Forgings: Carriage, Wagon, Automobile, Special

Send for Catalogue.

Digitized by Google

PLATE 5.
Low Wheel Runabout.

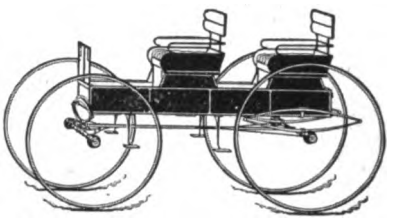


PLATE 10.
4 Pass. Beverly Wagon.

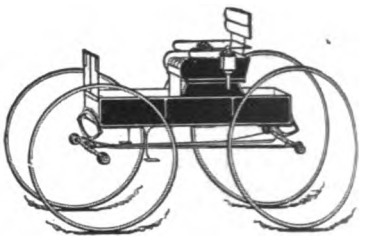


PLATE 15.
2 Pass. Beverly Wagon.

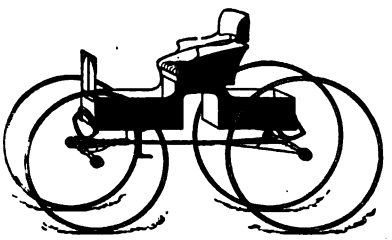


PLATE 20.
Cut-under Buggy.

MAKE YOUR

ADVERTISEMENT

ATTRACTIVE

By using these Advertising Cuts at 75 cts. each.

The plates shown on this page are especially made for newspaper advertising, but, because of their clearness, are as well suited for the best printed magazines and stationery.
They are

Unique in Style
Correct in Detail
Attractive in Appearance

and represent the most popular carriages of to-day.

A special plate, the size and character of those on this page, of your own design and for your exclusive use, will be furnished for $3 00.

One or more sent at 75 cts. each, by mail (postage prepaid) on receipt of check or money order.

TRADE NEWS PUBLISHING CO.,

24-26 MURRAY ST.,

NEW YORK.

PLATE 25.
Corning Buggy.

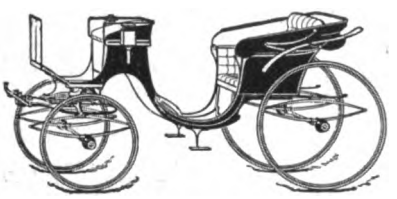


PLATE 30.
Panel-boot Victoria.

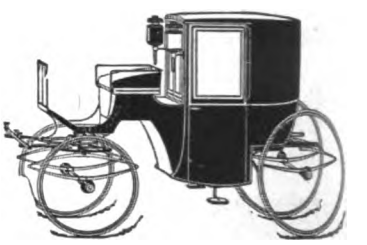


PLATE 35.
Brougham.

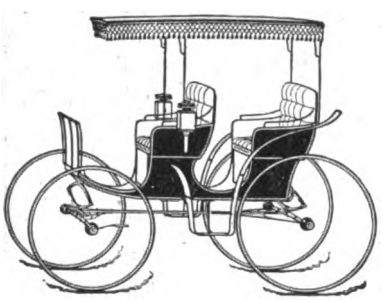


PLATE 40.
Canopy-top Surrey.

PLATE 45.
Elliptic Spring Buggy.

PLATE 50.
Ladies' Phaeton.

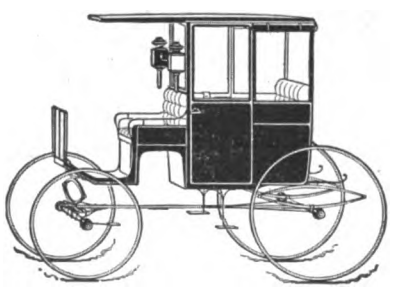


PLATE 55.
Station Wagon.

PLATE 60.
Doctor's Phaeton.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

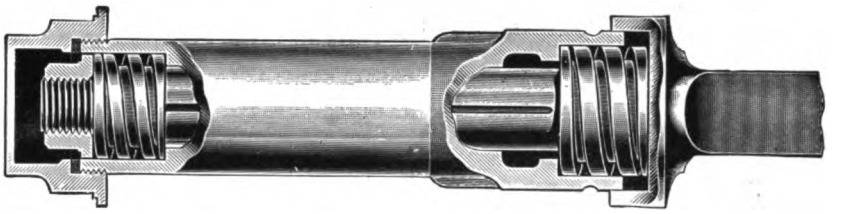
F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

C. T. RAYNOLDS & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

PRAY SPRING WASHER COACH AXLE



At present a very popular axle for medium and heavy weight coach work. Requires no renewing of washers or continual adjusting of nuts.

FOR PARTICULARS WRITE

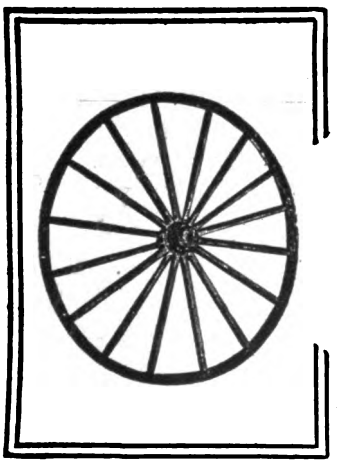
DALZELL AXLE CO., South Egremont, Mass.

BOLTS

Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.



Time Has Told the Story!

Service and satisfaction always follow our rolling stock

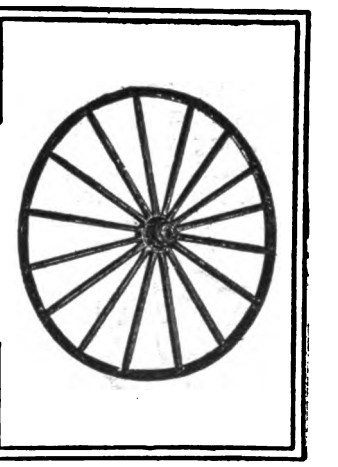
WHEELS

ALL KINDS—BEST QUALITY

Also RIMS and SPOKES

The Eberly & Orris Mfg. Co.

MECHANICSBURG, PA.



Digitized by Google

OUR No. 353 DASH

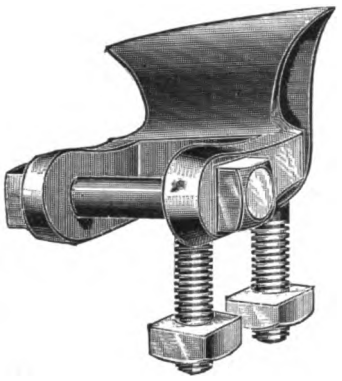
with the top edge protected by a japaned line rail is highly attractive.

BUFFALO, N. Y.

No. 353.

This style dash is also furnished with top rail nickel or brass plated. The end rails can be japanned.

TROY, OHIO.
CINCINNATI, OHIO.
ST. CATHARINES, ONTARIO.



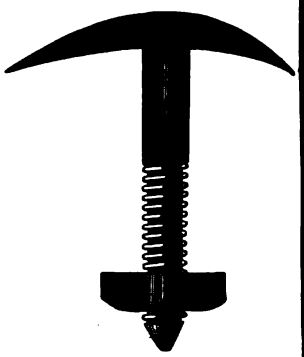
Skewed Shaft Couplings

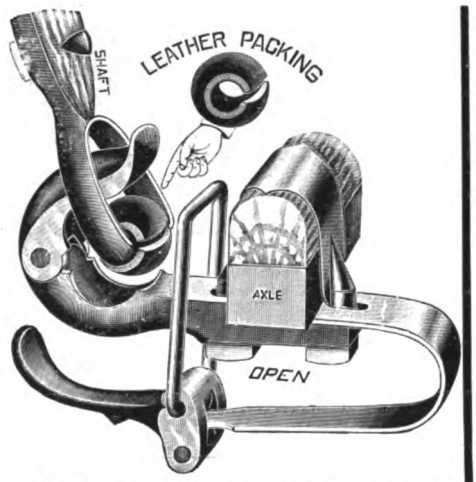
Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips ⅝ or ¾ width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

Catalogue "H" and Prices on Application.

COLUMBUS BOLT WORKS, Columbus, O.





Placing the loop over the end of the cap and drawing the thumb lever back until it rests against the flat spring closes the coupler, keeps it closed, and takes up the wear of the leather packing.

Unless a Carriage Coupler is furnished with a moulded leather bushing and steel spring JUST LIKE THIS it is NOT a BRADLEY.

THE BRADLEY Carriage Coupler

All steel, Noiseless, Quick Shifting, Ball Bearing.

The ONLY Carriage Shaft Coupler that is furnished with a

One-Piece Moulded Leather Packing

A packing that will outwear any other packing ever made. It fits the ball and socket. It is held in place by a spring steel retaining ring. It may be put on and taken off in a jiffy, and it stays where it is put.

C. C. BRADLEY & SON

SYRACUSE, NEW YORK.

Digitized by Google

The Hub

Vol. LI. MARCH, 1910. No. 12.

AUTOMOBILES

CARRIAGES

MOTOR TRUCKS

WAGONS

TRADE NEWS PUBLISHING COMPANY
24-26 Murray St., New York, N. Y.

Digitized by Google

Hoopes Bro. & Darlington Inc.

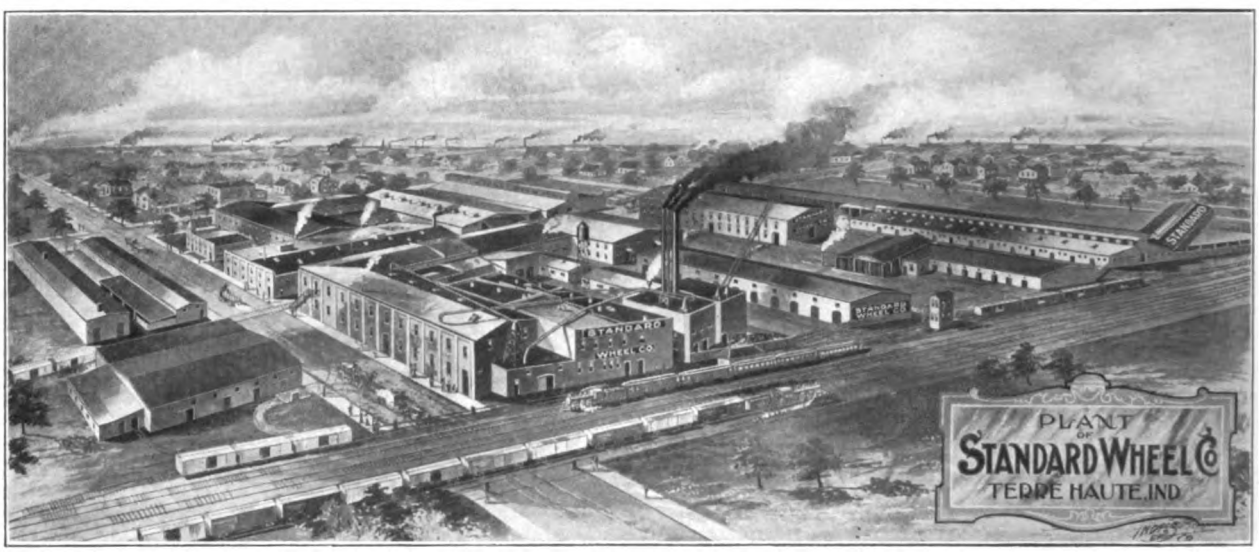
West Chester, Penna., U. S. A.

SARVEN
STAR or KENNY
Sweet Concealed Band
WOOD HUB
WARNER

WHEELS

HEAVY and LIGHT
for
CARRIAGES
WAGONS and
TRUCKS

IF YOU WANT THE BEST TRY OURS



VEHICLE WHEELS AND WHEEL MATERIAL

Two separate plants are operated; one for Medium and Heavy Wheels exclusively, and the other for Light Sarven, Warner, Compressed and Steel Band Wheels. All Grades of Wheel Material.

OUR GRADES ARE UNEXCELLED

WRITE FOR LIST.

Terre Haute, Ind. **STANDARD WHEEL CO.** **Terre Haute, Ind.**

CRANE & MacMAHON,

(INCORPORATED)

8-10 Bridge St., NEW YORK CITY, U. S. A.

Sole Manufacturers and Exporters of the

HICKORY NUT, ACORN, and STAR BRANDS OF

Carriage, Wagon and Automobile Wood Stock

FACTORIES:

ST. MARYS, OHIO. RICHMOND, VA.

For Export Prices apply to the New York office.

Digitized by Google

ESTABLISHED IN 1791

Wm. Harland & Son

Beg to announce that they have removed their United States Headquarters to Genesee Street and Erie Canal, Buffalo, N. Y.

Wm. Harland & Son

IMPORTERS OF

Harland's English Varnishes

FOR

Coach and Automobile Builders, Railway and Street Car Finishing

AND MANUFACTURERS OF

High Grade Varnishes for all Purposes

FACTORIES:

MERTON,
LONDON, S. W.,
ENGLAND.

GENESEE STREET and
ERIE CANAL,
BUFFALO, N. Y.

400 EASTERN AVENUE,
TORONTO,
ONTARIO.

Western Branch, 40 Dearborn Street, Chicago. C. H. Schooley, Manager.

Please mention "The Hub" when you write.

Digitized by Google

JOHN W. MASURY & SON.

Originators of

Superfine Coach and Automobile Colors

Acknowledged the Standard for Fifty Years

AND MANUFACTURERS OF

Fine Carriage and Automobile Varnishes

New York, Chicago, Minneapolis, Kansas City

WILLEY'S

COLORS

The RECOGNIZED STANDARD

C. A. WILLEY CO.

COLORS GRINDERS

and Manufacturers of Specialties in

CARRIAGE, AUTOMOBILE AND CAR

PAINTS

COLORS, VARNISHES, ETC.

HUNTER'S POINT, NEW YORK CITY

THE STANDARD

Auto Door Locks

FOR NINETEEN TEN

No. 999 Security Hook Lock for Touring Cars.

No. 25 Security Hook Lock with complete lever control for Touring Cars.

No. 39 Rotary Lever Lock for Limousines and other closed vehicles.

Test them out NOW for the coming season. : : : : :

English & Mersick Co.

New Haven, Conn.

Digitized by Google

1910 IMPROVEMENTS IN SWINEHART TIRES

MEAN MORE MILEAGE, LESS EXPENSE, NO DELAYS, DOLLARS SAVED

CONSIDER! Mr. Manufacturer, the advantages of our line before leaping into the uncertainty of 1910 season with an old-fashioned, inefficient, unimproved, inconvenient tire equipment.

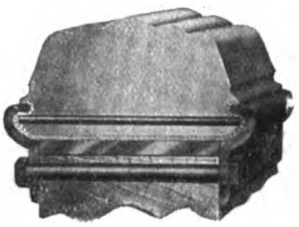
CONSIDER! Mr. Manufacturer, that truck owners in general are no longer buying tires because they are cheap.

CONSIDER! Mr. Manufacturer, that more Swinehart tires are used in New York and Chicago (the great commercial car fields) than any other make, because they give from 20 per cent to 50 per cent more service, and are more convenient to apply.

CONSIDER! Mr. Manufacturer, every time your customers are forced to lay up their cars for repairs to tires or renewals, it costs them from $10 to $50 per day, and consider that Swinehart quick detachable rims eliminate all such delays.

SAVE YOUR CUSTOMERS' MONEY AND IMPROVE THE REPUTATION OF YOUR CAR BY USING SWINEHART TIRES

FLANGE RIM FOR WOOD WHEELS



The success of our quick detachable rims during past seasons has demonstrated that truck owners appreciate this feature.

Our clincher tires with improved quick detachable flange rims make it possible for an amateur to change tires in thirty minutes. The nuts on one side are simply taken off, one flange removed, old tire slipped off, new one put on and flange replaced. No tools other than wrench and a few bars required.

QUICK DETACHABLE RIM FOR STEEL WHEELS

The rim shown at left has revolutionized the truck tire business and demoralized competitors. It has placed the truck tire manufacture on the same high plane of perfection as tires for pleasure cars. This rim is furnished for all steel wheels.

Not only have our tires and rims been improved constantly, but facilities improved and capacity enlarged in order to meet the constantly increasing demand for our product.

MOTOR BUGGY SPECIAL

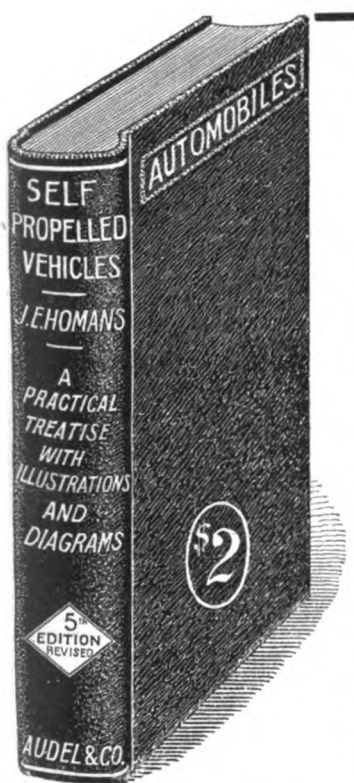
Expressly designed for motor-driven cars—not a tire for horse-drawn vehicles. Wide tread gives increased traction. Large size, beaded tread and concave sides add resiliency and durability. Made endless, no joints, easily applied by anyone.

The Swinehart Clincher Tire and Rubber Company.

Akron, Ohio

NEW YORK, 875 7TH AVENUE
CHICAGO, 1720 MICHIGAN AVENUE

DETROIT, 850 Woodward Avenue
ST. LOUIS, 2109 N. 9th
SAN FRANCISCO, 503 Van Ness Avenue
INDIANAPOLIS, IND., 809 Mass. Avenue



"Self-Propelled Vehicles"

Fifth Edition, Revised.

A practical treatise on the theory, construction, operation, care and management of all kinds of Automobiles.

By

JAMES E. HOMANS, A.M.

Contains 608 pages and upwards of 500 illustrations and diagrams, giving the essential details of construction and many important points on the successful operation of the various types of motor carriages driven by steam, gasoline and electricity.

This work is now the accepted standard, explaining the principles of construction and operation in a clear and helpful way. This book will be sent postpaid to any address in the United States, Mexico or Canada upon receipt of $2.00.

Address

TRADE NEWS PUBLISHING COMPANY

24 Murray Street, New York

SOLID BENDINGS

MAKE FAULTLESS SEATS

CATALOG "H" SHOWS SIZES
WRITE FOR IT

THE TUCKER WOODWORK CO. SIDNEY, OHIO.

Digitized by Google

New York
Madison Square Garden Show
VALENTINE'S VARNISHES

New York
Grand Central Palace Show
VALENTINE'S VARNISHES

The motor vehicles exhibited at the 1910 New York shows were in greater number than at any previous exhibitions. Seventy-six per cent. of the exhibitors finished with

TRADE VALENTINE'S VARNISHES MARK

PER 76 CENT

VALENTINE & COMPANY
New York Chicago Boston Toronto Paris Amsterdam

83 Years' Experience in Every Can

E.S. 1827 & CO. **Edward Smith & Co.**

CARRIAGE VARNISHES

Everything from the
Bare Wood to the Finishing Coat.

CHICAGO **NEW YORK**

HOTEL EARLINGTON
55 WEST 27TH STREET
Near Broadway, NEW YORK

This well known, absolutely fireproof hotel, after being entirely renovated, redecorated and fitted up complete with new plumbing has now reopened.

Rates from $1.00 and Up
With Bath, $5.00 and Up

Special rates by the season or year for permanent guests.
A special feature will be the cuisine, both in the dining room and in the new cafe for ladies and gentlemen. A la Carte and Table d'Hote.
Hotel under the management of

GUERNSEY E. WEBB
Formerly of the Ansonia

RUB — RUB — RUB

THAT'S THE EXPERIENCE SOME PAINTERS HAVE WITH A POOR RUBBING VARNISH. THEY RUB TILL THEIR HEART ACHES ONLY TO HAVE THE VARNISH SWEAT, OR ROLL UP UNDER THE PAD

XX Diamond Rubbing and Hard and Quick Drying Rubbing "A"

DRY HARD TO RUB IN TWO DAYS, WITHOUT SWEATING, ARE TOUGH AND THE BEST FOUNDATION FOR FINISHING COATS.

MADE BY **MOLLER & SCHUMANN CO.**

MARCY AND FLUSHING AVES., **BROOKLYN, N. Y.**

Digitized by Google

Goodrich
Solid Rubber Tires

Internal Wire Carriage Tires

Side-Wire Tires for Heavy Carriages

These products represent fifteen years of consistent development, and co-operation with customers. They have been distinguished always by the

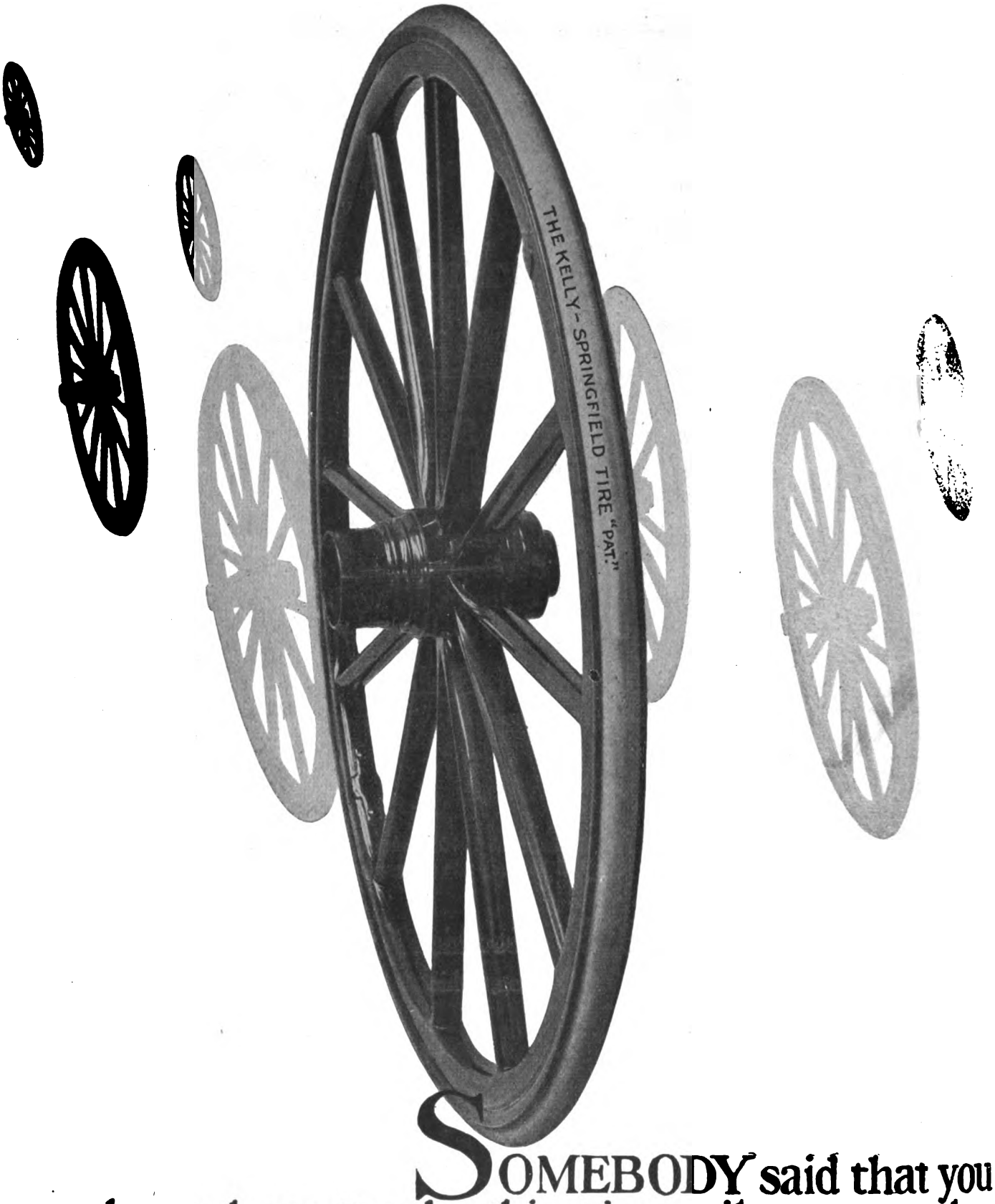
Mark of Quality

TRADE MARK

Copies of the 1910 Catalogue will be gladly sent on request.

The B. F. Goodrich Company
Akron, Ohio

Digitized by Google



SOMEBODY said that you never know how good a thing is until you see the imitation. WE say you never know how bad its imitations are until you see the

Kelly-Springfield Tire

Digitized by Google

The Hub

Copyright, 1910, by the Trade News Publishing Co. of New York.

Entered in the New York Post Office as Second-class Matter.

Vol. LI. MARCH, 1910. No 12.

THE TRADE NEWS PUBLISHING CO. OF N. Y.

Publishers of THE HUB

J. H. Wright, *President.* G. A. Tanner, *Secretary and Treasurer.*

24-26 MURRAY STREET, NEW YORK.

Jacob H. Klein, *Technical Editor.*

Other Publications of Trade News Publishing Co.:

HARNESS (monthly) .....per year, $1.00

AMERICAN HARNESS AND SADDLERY DIRECTORY (annual) .....per copy, $4.00

The Hub is published monthly in the interest of employers and workmen connected with the manufacture of Carriages, Wagons, Sleighs, Automobiles and the Accessory trades, and also in the interest of Dealers.

Subscription price for the United States, Mexico, Cuba, Porto Rico, Guam the Philippines, and the Hawaiian Islands, $2.00, Canada, $2.50, *payable strictly in advance.* Single copies, 25 cents. Remittances at risk of subscriber, unless by registered letter, or by draft, check, express or post-office order, payable to the order of Trade News Publishing Co.

For advertising rates, apply to the Publishers. Advertisements must be acceptable in every respect. Copy for new advertisements must be received by the 25th of the preceding month, and requests to alter or discontinue advertisements must be received before the 12th day of the preceding month to insure attention in the following number. All communications must be accompanied by the full name and address of writer.

FOREIGN REPRESENTATIVES:

France.—L. Dupont, publisher of *Le Guide due Carrossier,* 78 Rue Boissiere, Paris. Subscription price, 15 francs, postpaid.

Germany.—Gustave Miesen, Bohn a Rh. Subscription price, 12 marks, postpaid.

England.—Thomas Mattison, "Floriana," Hillside Avenue, Bitterne Park, Southampton. Subscription price, 12 shillings, postpaid.

The Blue Print.

Since the chassis of the automobile has made itself at home in the carriage shop, the blue print of the working parts has become a familiar object in the smith shop. These prints are sometimes expressed in terms of the metric system, which bothers the man who thinks in inches, sometimes.

The carriage builder who has to build a body to fit the chassis should have a print suited for his especial needs, as for instance, measurements where taken from the dashboard to be calculated from the same side of it; the length from the dashboard to the outside edge of the rear cross member; the width overall of the chassis, with particulars of any side contraction which may occur on the body side of the dash, distance from dash to center of rear wheels, height of tired wheels and wheelbase; track and tire section; position of steering wheel, which will give position of driver's seat; all radii and centers of arcs; throw-out and travel of levers, so that front doors can be accurately designed; clear statement of relation of rear suspension springs to chassis; position of tank, and of filter and vent; width of chassis from member, so as to get place of bolt holes; size and shape of bonnet, so as to make front doors fit, where indicated; width, height and thickness of dashboard; if measurements are given as for loaded or unloaded chassis, and weight load was calculated at; area occupied by gear box, main shaft, etc.

These requirements are necessary but frequently wanting in such prints.

When the body builder is pinched for room, as when a wide body is wanted, the size of the rear wheel is very necessary. As tire sizes are not always what they are stated to be, it becomes another source of trouble to the body maker.

The carriage builder out to let the chassis maker hear from him if there are discrepancies, or a lot of time will be wasted that costs money.

Vehicle Dealers and Automobiles.

Some recent conventions of vehicle and implement dealers were instructive because of the statements made about the wide extent of the motor car. Many gave personal experience in handling such lines, and all spoke of the promising outlook in this branch of the trade.

What seemed to strike the dealers most forcibly was the ease of securing cash payments for the goods, something so foreign to their customary methods of business. Others said they were quite ready to take notes in payment as the farmer's paper was very convertible property these days.

Another significant fact developed was that the automoble was handled just like any vehicle. There was no necessity for maintaining a garage or even a repair shop. The goods went out to the purchaser just as they stood on the floor with guarantees or agreements about repairs.

The testimony of such vehicle manufacturers as addressed some of these meetings was to the effect that the vehicle dealer was the logical distributor of automobiles. Why should this not be the pith of the situation, seeing it is simply a transportation proposition, which is all a vehicle amounts to?

The automobile maker and the carriage dealer will certainly come together in time, because the machinery of distribution is more economical when operated through a highly organized agency such as the dealer has become through years of enterprise in one direction.

The buyer who is spoken of in trade parlance as a "prospect" is reported to be growing in number and the per cent of "prospects" developing into buyers is also growing.

One of the chief requisites for success is that the dealer

Digitized by Google

should make a study of the details of the engine, the car, and all particulars that will enable him to make a clear presentment of the facts to the buyer. A study of journals giving close attention of such matters will advance him in knowledge more than a study of catalogues. The dealer has entered upon a new phase of his business that calls for study and progress, and we have no doubt he will be equal to the demands made upon him.

Overtime Rush.

The extraordinary activity, and the rustle and hustle in getting out an immense output of motor vehicles that are items of trade news sounds most invigorating. An output of twenty-five thousand cars is spoken of as if it was not a really tremendous stunt, but it is.

It is a question that can alone be determined by the maker, and subsequently by the owner, if such methods do not have serious drawbacks in the production of work of high class.

The mechanic paid by the hour is going to be more careful, if more deliberate, than the piece worker, and the work will be the gainer. Overtime work is too much a matter of haste and results to produce a finished product. This night shift also is a factor making for a poor product, as two kinds of intelligence are concentrated on the same work, and what is very bad, responsibility for error is divided. Artificial light is also a handicap.

If the above is true of the metal parts of the vehicle, what is to be thought of rush work in paint shop and trim shop. It cannot be of a high standard of endeavor.

We suppose foremen of large plants are fully alive to these considerations, but, then, the work must be under pressure to produce the great season's output. Perhaps the end, (dollars) justifies the means, but we think a different view must eventually obtain, and it will in time be acted upon.

Torpedo Bodies.

We present a page of sketches of the new fad and fancy, the torpedo body, now becoming rife in this country. Those bodies were shown on cars in the Olympia Show in London, and are examples by the foremost English and French auto builders. The credit for gathering and presenting them is due to Cooper's Journal. We think the lines may prove of suggestive value to those builders who like such lines, or who think an inartistic buying public will like them. The exercise put forth, aside from novelty of design, for this construction, is that it is a dust-preventer idea of merit. We think the same preventative could have been more artistically encompassed; in fact, we have seen it so done in this country; no later than the Grand Central Palace show.

"It is said that journalists and advertising solicitors are born—not made, and * * had wide experience in both." This from the pen of an editor of a trade journal, who is active in both capacities above mentioned. We deem it wonderful that a man can have "wide experience" in being born, also in being made, but it is hardly more astonishing than the use of words giving forth sound without sense; but perhaps he is speaking esoterically and describing a miracle!

The fuel situation as regards the supplies that the internal combustion engine demand is, like quality of mercy, strained. There is a daily consumption of more than two million, five hundred thousand gallons of gasoline, and so close is demand on the heels of supply that the least let up in daily production would stop the movements of motors in astonishing fashion.

This would indicate a state of supply so deficient for needs that are growing that it is surprising more progress in purveying a cheaper fuel is not in evidence. Alcohol was heralded as a commodity soon to be plentiful in supply, owing to the tax restriction being removed, but its price is by no means as low as it could or should be. Crude oil, by means of convertors, can be easily put into gaseous form, yet it does not seem to be making headway though it has a great advantage in price over gasoline. There is apparatus, too, that makes its use of practical consideration. It is somewhat surprising that these fluids are not more in evidence in the trade.

ENORMOUS VALUE OF 1909 CROPS.

The final estimate of the Bureau of Statistics, Department of Agriculture, indicate the harvested acreage, production and value of important farm crops of the United States, in 1909, to have been as follows:

Crop.	Acreage. Acres.	Value Dec. 1 Total Dollars.
Corn	108,771,000	1,652,822,000
Winter Wheat, 1909	28,330,000	459,154,000
Spring Wheat, 1909	18,393,000	270,892,000
All wheat, 1909,	46,723,000	730,046,000
Oats, 1909	33,204,000	408,174,000
Barley, 1909	7,001,000	93,971,000
Rye, 1909	2,006,000	23,809,000
Buckwheat, 1909	834,000	12,188,000
Potatoes, 1909	3,5255,000	206,545,000
Hay, 1909	45,744,000	689,345,000
Tobacco, 1909	1,180,000	95,719,000

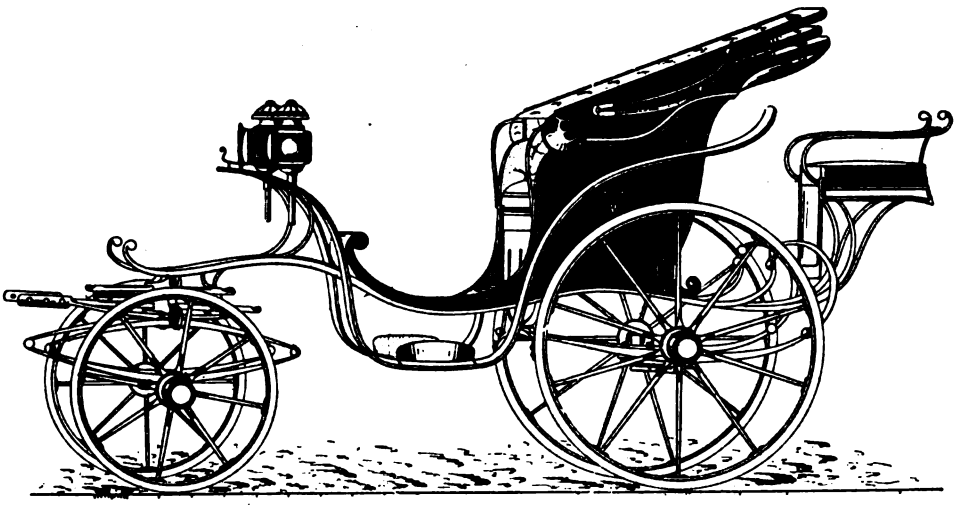
VEHICLES EXPORTED TO AFRICA.

Cape cart hoods, curtains, and similar protective arrangements should be of waterproof canvass, instead of rubber, as the latter cannot stand the action of the sun in the high altitude of the Transvaal and the Orange River Colony. Horse drawn vehicles require brakes, and a natural wood finish is more desirable than a painted jab, owing to the atmosphere and rough work of the veldt. Concord springs should be used instead of cross springs.

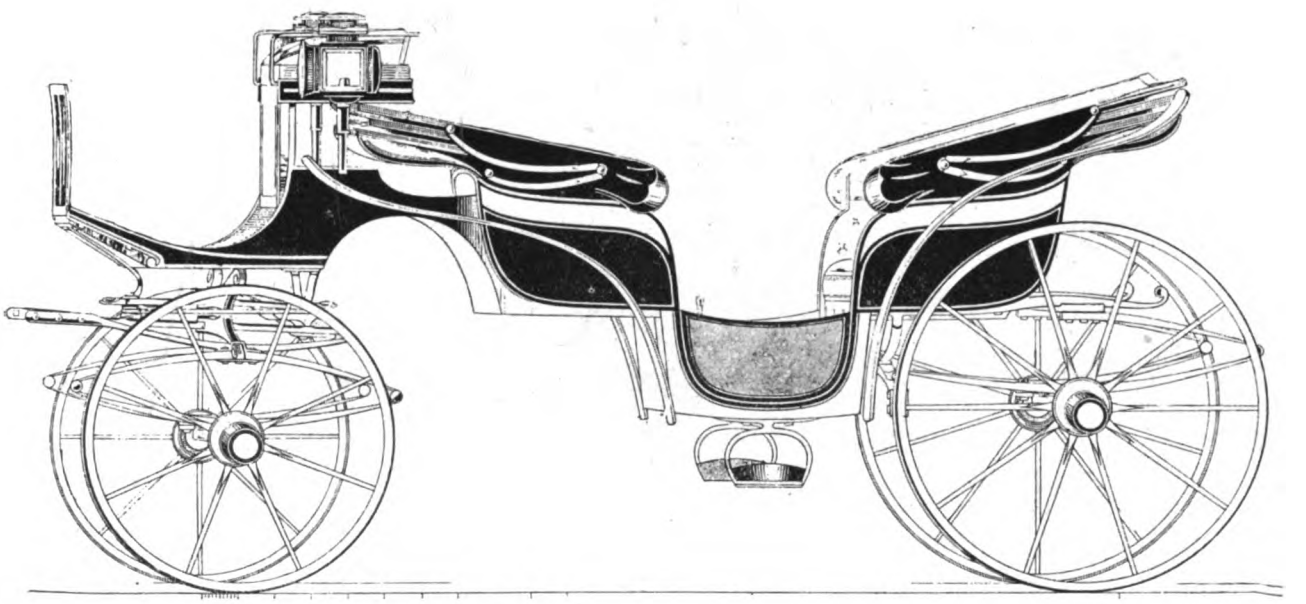
Manufacturers of vehicles must carefully bear in mind that all vehicles for up-country are subjected to a warm and exceedingly dry climate. Also that the roads are often either very sandy or rocky and rough, so that in the latter case the trap has to stand a great deal of constant jolting, and the highways frequently dip sharply into deep water courses, which puts a good deal of strain on the iron work in front. Vehicles make long journeys at a time, when they have to stand out at night and are not cleaned for days. Bolts should be used whenever possible, or, failing these, screws, but nails are useless, owing to the atmosphere, which dries the wood even when well seasoned, and the rough roads which jolt them out.

Digitized by Google

Vehicle Fashions for March 1910



PRINCESS PHAETON.



VIS-A-VIS

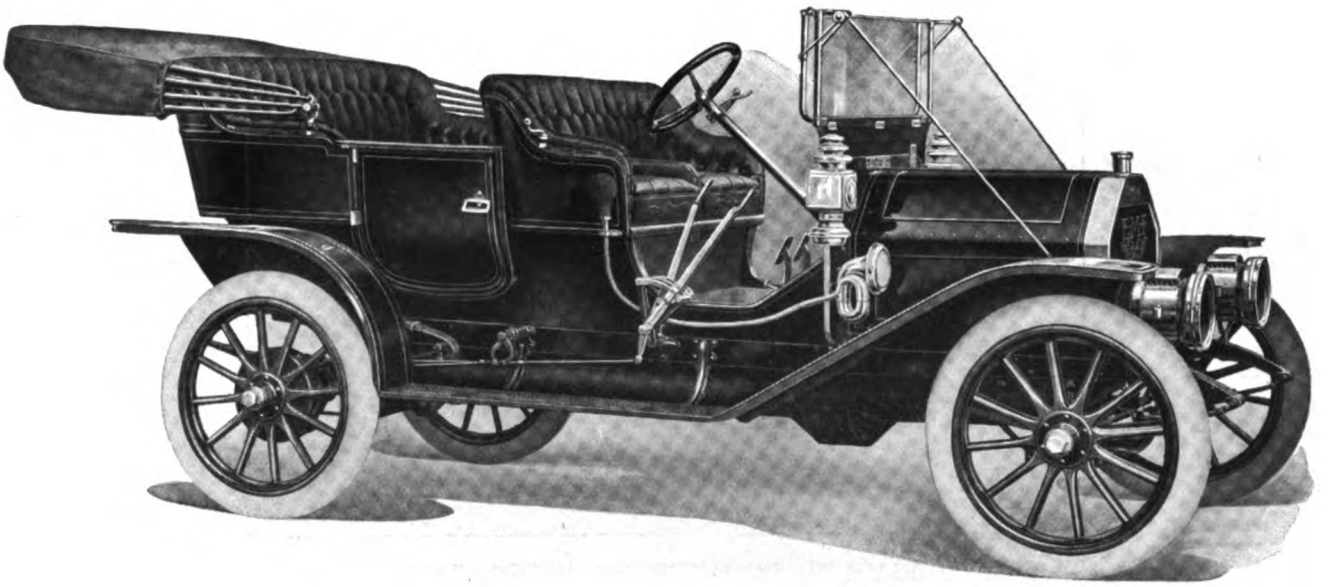
Two Styles of Foreign Vehicles

Digitized by Google

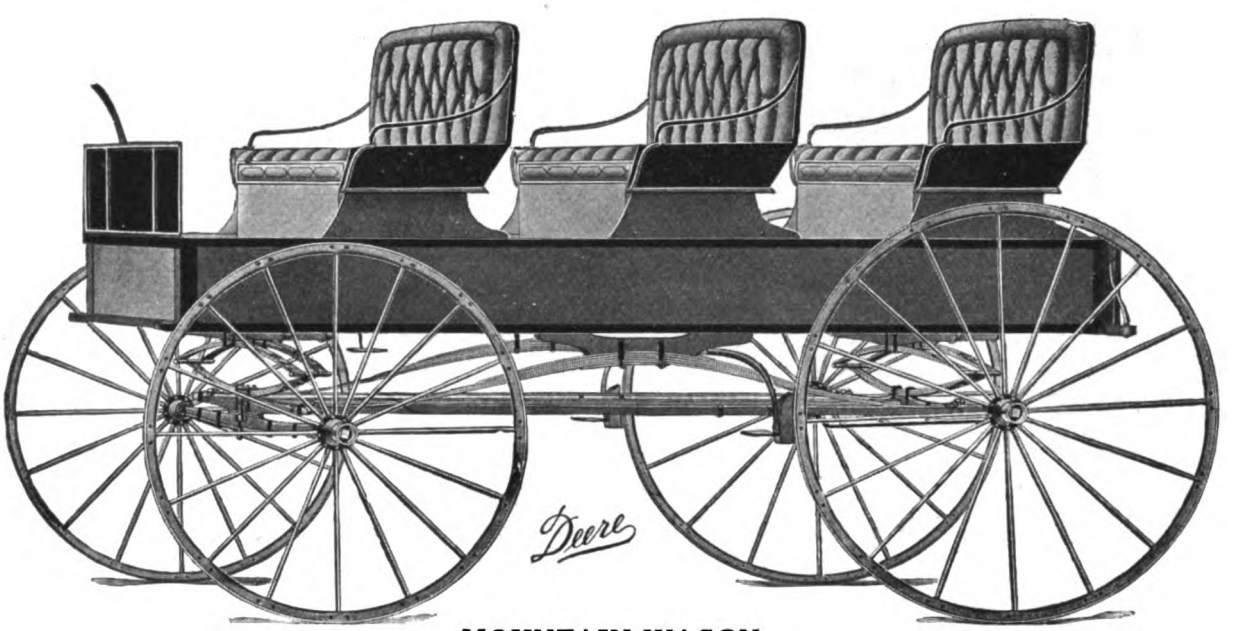
TWOMBLY PONY MOTOR HANSOM.

(Described on page 447.)

Digitized by Google

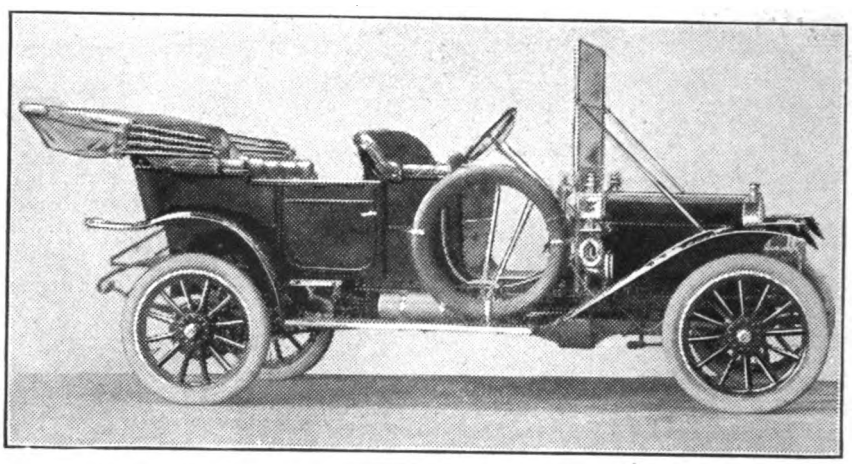


FIVE PASSENGER TOURING CAR
Built by the E-M-F Company, Detroit, Mich.

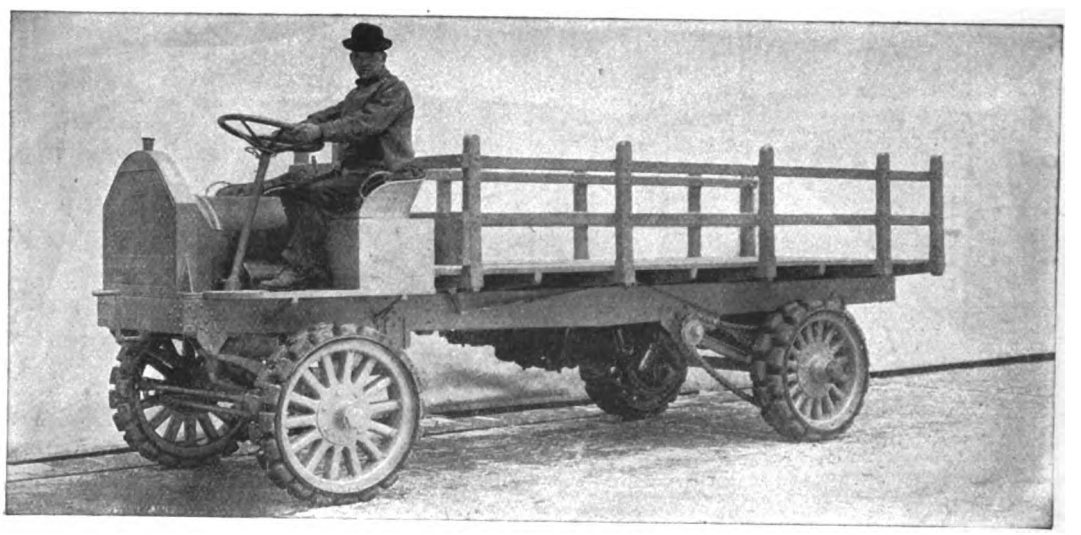


MOUNTAIN WAGON
Built by the John Deere Plow Co., St. Louis, Mo.

Digitized by Google



FIVE PASSENGER TOURING CAR
Built by Corbin Motor Vehicle Corporation, New Britain, Conn.



FIVE-TON GASOLINE TRUCK
Bult by American-LaFrance Fire Engine Co., Elmira, N. Y.
(Described on page 449.)

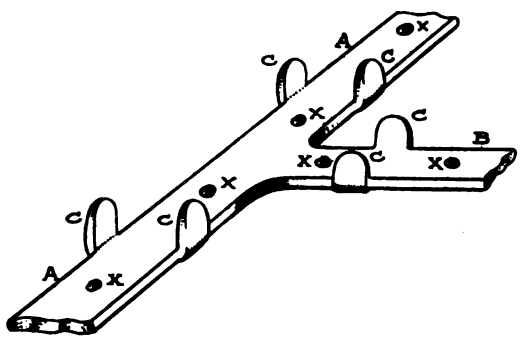
Digitized by Google

Wood-working and Smithing

EARS ON SHAFT IRON TO STIFFEN THE SHAFT

If one could tell just how many shaft bars and shaft T's break at the intersection of the shaft and its bar, in a locality of 100,000 inhabtants within a year that same one could and would pass muster as "chief cook and bottle washer." The writer is trying to put that time-honored position out of business in the shaft line.

It is a fact the spot in question is just the weak spot. We begin first by not putting a bolt through the mortice in shaft

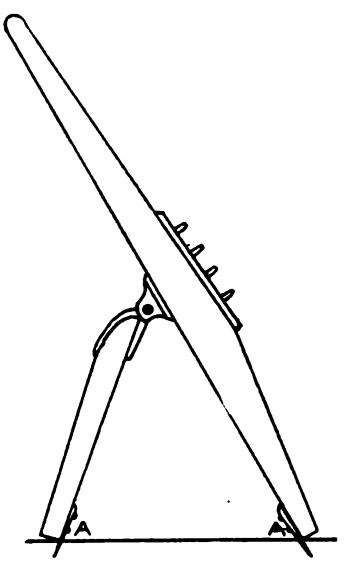


and tenon on bar. A A is the shaft plate, B is the T plate, C C, C C, C C, are lugs or ears turned up on each side of the shaft iron and T iron just half as high as the shaft is thick. The X's stand for bolt holes. When the irons are all on and secured with hammer and hold-on iron, set the lugs up close to the wood of shaft and bar. The shaft and bar will have to find some other place to break.

WAGON JACK.

A good and practical wagon jack is described by C. L. Morman, and the illustration herewith conveys the idea.

It is composed principally of two pieces of good, solid, straight grained hard wood stock. The long piece is 1½ by 2¼ inches by 4½ feet long, while the shorter piece is 1½ by 1½ inches by 1 foot 10 inches long. The irons for the hinge joint can be made

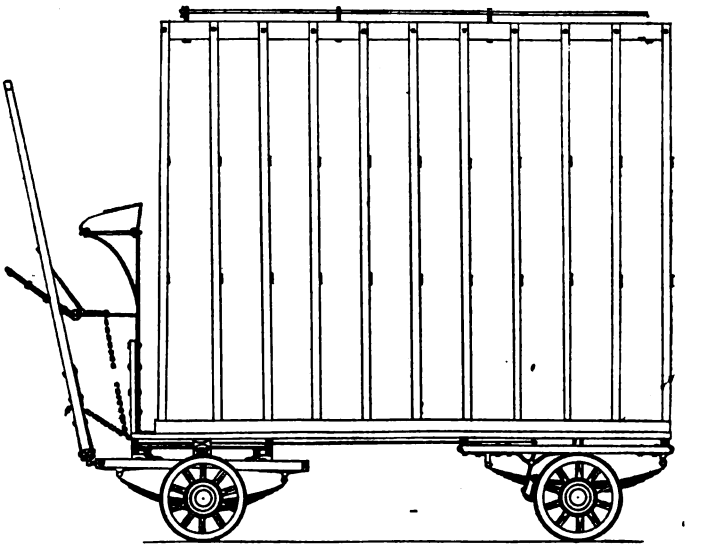


by any practical smith, and need no explanation. The short piece should be hinged to the longer piece about 2 feet 4 inches from the bottom end of the long piece. The plates for catching under the axle are fastened to the face of the long piece about 2 feet 3 inches from the bottom end. The points AA should be sharpened so as to keep the jack from slipping.

PLATE GLASS WAGON.

A low-hung platform, to give as much head room as possible for the conveyance of large sheets of plate glass is thus illustrated and described:

Length out to out of body, 11 ft. 6 in.; width out to out, 5 ft.; height from ground to top of floor, 2 ft. 4 in.; main sides, 9 ft. 2 in.; yellow pine rabetted to sides, ½ in. and ends rounded over; front carriage, 4 ft. 6 in. long, 3 ft. 6 in. wide; guides and bars, 2¼ in by 2¼ in.; bolsters, 4 in by 3 in.; wheelplate, 3 ft. diameter, 1¾ in. my ½ in.; springs, 2¼ in. by 5/16 in.; steel hind springs, 3 ft. 10 in. long, nine plates 4½ in. compass; front springs, 3 ft. 6 in. long, eight plates, 4½ in. compass; front axle, 2 in. drabbles with solid flaps made on the underneath to allow them being fixed on the top of springs, 2 in. between flaps and backs of boxes, and 3 ft. 6 in. over flaps; hind axle with ordinary flaps to fix underneath the springs, 2 in. spring blocks, two cross bearers and also fixed directly below outside summers, and fixed to body with 7/16 in. bolts, the scrolls being fixed to these; the



bearers are 2½ in. by 2½ in. by 5 ft. long; wheels, 20 in. high, 2¼ in. spokes, 2¾ in. felloes, 9½ in. and 10 in. stocks by 11½ in. long; a solid front is fixed with short corner irons 2 ft. high and 22 in. wide from near side, dickey being fixed to this; heel board, 2 ft. 4 in. from floor, and seat 21 in. from heel board double brake working on both hind wheel, with treadle on heel board; shafts, 8 ft. 2 in. long, 2½ in. by 2¼ in., fitted with two bars and two nunters, brace stays and bar plates, and hung to front carriage with capping irons and ¾ in. long bolt.

The supesrtructure is built upon a separate frame consisting of two side pieces and eleven cross bars, 3 in. by 3 in., halved together, and 11 ft. long, and 4 ft. wide, being fixed to the main side with five bolts in each side, and at a distance of 6 in. from the outsides of body, upon this frame is built the uprights consisting of 22 in. pieces 4 in. by 2 in., 8 ft. 9 in. high. They are fitted together in pairs, being 18 in. wide over at the bottom. and bevelled at the top where they meet. A long piece is then halved or let down between these 4 in. by 4 in. and bolted through, each pair being mortised into the cross pieces of framing and bolted at the bottom. At a distance of 3 ft. from the bottom and 3 feet above also, cross pieces are let on each pair, bracing them together and fixed with screws, four eye bolts are fixed to allow a ⅞ in. long bolt to pass through from end to end standing up 3½ in. above the top bar. The outside edges of

Digitized by Google

the uprights are covered with a stout felt turned and nailed on the edge. There are four struts, two each side, 2 in. by 2 in., with iron dowell sticking out of bottom ends and corresponding holes in cross pieces of frame, and having straps at top ends to allow them being fixed after the load is on to prevent movement.

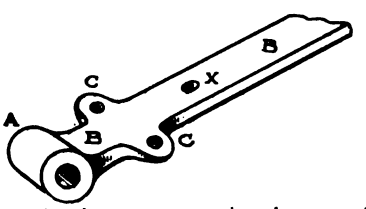
DRYING LUMBER.

The wood stock that goes into the wood shop is a most important article, and the drying is something that means the difference between good or indifferent work in the carriage or wagon shop. The following practical considerations we find in the Woodworker:

If lumber is not properly piled on the yard to air-dry, overhanging boards will check, twist and bend down by the weight; they become weathered, and these projecting ends are practically worthless. Stickers are not put over each other and not put in thick enough, and no attention is paid to uniformity of thickness; hence, the lumber is kinked, which necessitates cutting out; the proper pitch of piles is lacking, and this causes the lumber to strain. When put in the kilns the same slipshod methods are pursued, and a woeful lack of knowledge of proper means of drying is universal. The lumber is baked dry, causing it to twist and warp, check and honeycomb. Some of it is overdried, and some is undried, even in the same car, and when this much abused lumber reaches the saw, it is literally cut all to pieces to remove the defects that have been largely produced by carelessness. Now, 25 per cent of the above average waste can be saved by yarding, sticking and drying this lumber properly. This 25 per cent. on $20 lumber equals $5 for 1,000 feet. If a manufacturer cuts 10,000 feet a day, it is $50 a day, or a saving of $15,000 a year of 300 working days—rather a tidy sum to be thrown away in useless waste.

CLIPPING SHAFTS AT HEELS.

Just how much strain the heels of shafts will be subjected to when in use is a matter which may be neither suggested nor anticipated. In such cases it is better to settle the matter by not leaving any opportunity for either asserting itself with a "Didn't I tell you so." It is a recognized fact that where the shaft wood splits first is at the bolt hole at the heel; the same bolt is the first one to become loose and, if furnished with a



T head, the same begins to wear in the wood and becomes loose. In this instance the subject refers to the light grade of business wagons with either long or short bent shaft heel.

Our sketch shows a ready and reliable method of construction which settles the whole subject thoroughly. A shows the shaft head, B, B that part of the shaft plate back of the bar; X is a bolt hole; C, C are two solid clip bars or lugs just in front of the shaft head furnished with holes to take a clip 1 to 1½ inches wide with 5/16 bolt ends.

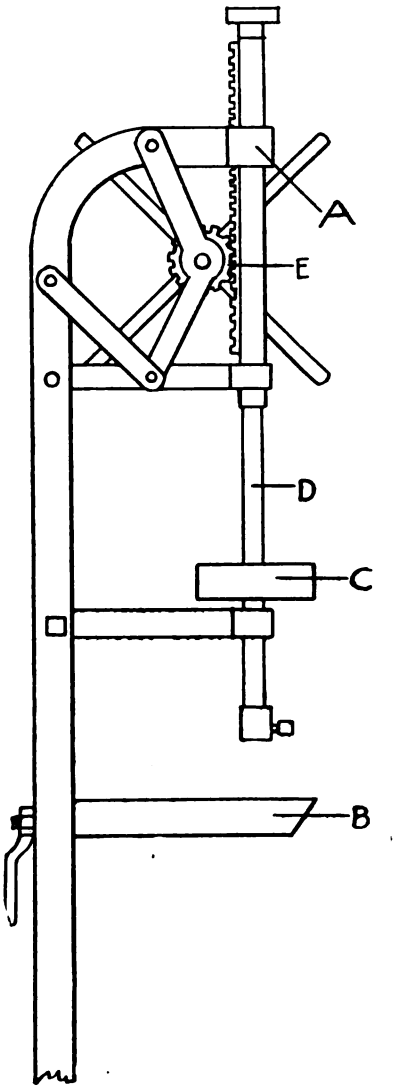
CINCINNATI CARRIAGE MAKERS.

The Cincinnati Carriage Makers' Club, at a beefsteak dinner at the German Village in Newport. February 10, nominated the following board of governors: Jason Schneider, C. W. Shipley, Ed. Huling, Julius Lang, Dave Gibson, W. M. Laidlaw. W. W. Warner and A. J. Sebastiani. Songs and story telling aided in passing a very pleasant evening, the dinner consisting of beefsteak and pitched potatoes. At 10 o'clock bratwurst, salad and coffee were served. The music was by the Pork Chops Band.

CHEAP POWER DRILL.

A homemade power drill suitable for use on both iron and wood is the product of the ingenuity of George Nablo, a contributor to American Blacksmith. His description of how it is made, and its advantages are of benefit to workers in iron.

The main frame is of 1¼ by ⅝ inch stock in one piece. The piece is doubled or bent at A, running parallel its entire length and allowing a space of ¾ of an inch between the pieces for attaching the sliding rest B. In place of the screw feed usually found on a drill we employ four levers and a rack and pinion arrangement. The pulley is shown at C. The vertical sliding stem, D, is provided with a groove for its entire length, into which



A SHOP-MADE POWER DRILL

fits a loose key on the pulley. This grooved stem runs inside of a long sleeve which is provided with cogs. These cogs or the toothed rack, was made from 1 to ½ inch stock with a fuller in one piece and of a size to fit the teeth in the cog wheel or pinion. The rack is fastened securely to the sleeve by means of rivets.

The assembling of this machine may easily be seen from the engraving. When fastened to a post the drill is quicker in action than the usual run of screw-fed drills and the feed is more easily controlled. The machine costs but a trifle compared with the drills to be found on the market and it is practically as serviceable for the general run of work.

Any practical smith can make a drill of this kind.

Fire occurred in the Armstrong Carriage Company's building at New Haven, Conn. Loss, $35,000.

Digitized by Google

STRAINS AND STRESS.

Sometimes the gathering together of subjects that have been treated in a homeopathic way, and given in one allopathic dose is a good thing. We find in a recent issue of the English Automobile and Carriage Builders' Journal a very comprehensive colaboration of the strength of materials and we quote from it freely, believing it will be well worth the attention of students:

In constructing a vehicle, an important and practical consideration is the dimensions to be adopted, not only in the general design of the vehicle, but in the size of the cross section of the various rails and pillars used in the body and other parts. As timber is the most important material used, so far as quantity is concerned, its nature and proportions which influence its strength will be considered first.

The strength of a piece of timber varies according to the kind of tree it is taken from, the conditions under which the tree was grown and felled, the character of the subsequent seasoning, and the part of the tree from which the particular portion was taken.

A piece of oak, if felled from too young a tree, will not be as strong as if it were cut down between the age of 60 and 100 years; the same remarks apply to pine, but ash may be cut at 50 years' growth. Then again, the tree should be cut at a certain season, generally at midsummer. With regard to seasoning, it is, perhaps, unnecessary to say that natural methods product the strongest timber, and the smaller the piece the more effective will be the drying, so that, as far as possible, the carriage builder should endeavor to season his framing as near as possible in the sizes and shapes it will finally present, in the same way that panel board is kept in the timber loft.

Generally speaking, the strength of a tree is governed by the rate of its growth, the quick-growing variety such as pine, being less strong than a slow-growing one such as ash or oak.

It has been mentioned that the quality of a piece of timber also varies according to where it has been cut in the tree. The sapwood or timber near the bark is inferior to the heart or inner wood, although the exact centre of the tree is not to be recommended. The presence of shakes, rind galls, knots, worm holes or discolorations of any kind, also influence the resisting properties of a piece of timber, no matter what position it may have occupied in the log.

In order that the strength of a piece of timber may be ascertained it is necessary to conduct a series of experiments. A number of pieces of the same kind of timber having the same dimensions or proportionate ones are held in variously designed machines, which are constructed for the purpose, the results being averaged, from which may be ascertained the power to resist tensile and compressive strains and so forth. Two pieces of timber, exactly the same size in every way, and cut from the same log, experimented on in the same machine, under the same conditions, will often give varying results, so that a sufficient number of tests is necessary in order to establish anything like a reliable average, which, as we shall see, is only used so that it may be divided by four or five, as the case may be, for working conditions and in designing the structure.

In considering the strength of any material, it is necessary to fully understand three things—load, stress and strain.

The load is the sum of all the forces acting upon a structure, including its own weight and the parts which it supports, and is expressed as so much weight.

The stress is the resistance of the structure to the action of the load.

The strain is the change of form in the structure produced by the various forms of stresses set up by the load.

The load is called a dead load when it produces a steady or a gradually increasing or diminishing stress, and a live load when it is constantly varying.

A dead load on the pillars of a brougham would be the weight of all the rails and panels connected to them, including the roof, while a live load on a step tread would be the stress occasioned by a person getting in or out of the vehicle. The undercarriage of a vehicle has to bear the dead load of a vehicle above it, as well as the ever-varying stresses set up by the different conditions of roads over which the vehicle is traveling.

Stress is expressed in weight multiplied by unit area of cross section. Thus, if A be the total load applied in pounds and B the total number of square inches in a given section, then the stress. or intensity of stress, as it is sometimes called, would be $\frac{A}{B}$ —lb. per square inch, or, putting it into figures, if a load of 60 lbs. has to be sustained by a bar of timber 5 in. by 4 in., the intensity of stress would be $\frac{60}{5 \times 4}=3$, which means that the strees is 3 lbs. per square inch.

The load may act on a structure in various ways, such as tending to stretch, shorten, bend, crumple, or twist it.

If the line of action of a load be along the axis of a rail, so as to tend to pull it in two or elongate it, the resistance set up per square inch of cross section is called tensile stress, while the elongation or alteration in form lengthwise per unit of length is termed the tensile strain. Tensile stresses and strains are seldom met with in the wooden framework of vehicles, parts under tension being generally of metal, as the fastenings, which would have to be attached in order to produce any appreciable tension, would themselves become detached, owing to the relatively low lateral adhesion of the fibres, or detrusion, as it is called. A rough example, however, is presented in the pull of the horse exerted on a pair of straight shafts when the animal draws from a staple and no traces are used, or the side members of a square undercarriage. Theoretically the whole of any vehicle behind the perch bolt is in a state of tension, the friction between the hind tires and the road being the force acting in the opposite direction to the pull of the horse. Tires which require contracting have been in the state of tension, although the manner in which the forces act may not be so apparent as in the cases cited above.

So far as the wooden framework of a vehicle is concerned, it may be taken for granted that tensile strength has seldom to be calculated.

Closely allied to tensile strength is compressive strength, which is a force along the line of the axis of a structure, but tending to shorten it and not elongate it. The compressive stress and strain is reckoned per unit of cross area and length as before. When the horse backs in the example given under tensile strength, the shafts would then be in a state of compression, especially if someone was urging the horse forward by trying to turn one of the hind wheels forward. The plumb spoke of a wheel is in a state of compression, so are the standards of a van with the weight of the roof above them, which becomes a highly important consideration when a top load is carried, such as bears on the side, corner and standing pillars of an omnibus having a large seating capacity on the roof.

Pillars, especially long ones, yield by bending, and the strength may be increased one-seventh by enlarging them in the middle, but this is seldom taken advantage of in vehicle construction, the factor of safety being ample. In architectural work a pillar is often swelled in the middle, but this is more for appearance than strength.

When a structure is supported at its extremities, the application of a load at any point between the supports tends to cut or shear the structure across at any point between the load and its supports. As well as this vertical shear, there is also a horizontal one set up as well, which may be easily demonstrated by composing the structure or beam of a number of horizontal layers. If a beam of 3 in. thickness be made of three 1 in. boards and supported at both ends, the placing of a weight or load of any character on the top of this parcel of boards (or very often the weight of the boards themselves) will set up a horizontal shear, that is, the boards will slide along one another and bend

Digitized by Google

downwards at the same time; each board will project slightly beyond the one below it. This action takes place, only in a much lesser degree, in a solid beam.

Shearing strains and stresses are very common in a vehicle body. Seat boards and landing boards have to undergo this type of stress, also several parts of the undercarriage, and they are also well illustrated in a wooden axle bed at the spring bearings.

Detrustion is the term particularly applied when, from the shape and position of the parts, there is a tendency to push off a portion in the direction of the grain. In carriage building we generally endeavor to design a joint so that the stress acts across the grain of the timber. Where the hoopsticks are notched into the cant rail, the ends of the sticks push across the grain of the cant rail. Instances of detrusion are not very easy to exemplify. The framing of a much sloped sham door pillar into the bottomside of a phaeton may be considered as this type of stress, and it also occurs in such places where a plate is let into the surface of the wood which undergoes any pulling or pushing strain in the direction of the grain of the wood.

Torsion consists of the shear taking place in a circular direc- and seldom occurs in wooden structions. This twisting stress, however, takes place in a wooden structure when bearing surfaces are not properly levelled, such as a badly fitting tenon into a mortise at a half lap.

Before it can be determined how strong we should make a rail or pillar we must know the actual loads at which the beam is actually ruptured or broken. A load may cause a temporary or permanent strain, the temporary change of form being quite safe in most cases, but a permanent set shows that the factor of safety is being exceeded, and most authorities agree that permanent change of form in the structure takes place after it has been loaded to half its ultimate capacity. The carriage builder would consider any permanent set in any part of the vehicle a sign of weakness, and in supplying a new part it would either have to be of larger cross section or stronger material, or point to the fact that the rail was below the average strength, owing to some defect in the timber. The actual breaking point has to be determined by experiment, the load being gradually increased until rupture takes place, and averages are taken as before mentioned. The stress is usually reckoned at so much per square inch of cross section.

This factor, multiplier, co-efficient, or modulus varies with the various timbers, and, as might be supposed from previous remarks, in the same size specimens of the same type of tree, even from the same log.

The modulus of rupture of some of the timbers used in vehicle building expressed in pounds per square inch of area are here given. The figures given by various authorities vary between fairly wide limits as there may be many varieties of one timber. The figures given represent a fair average:

Ash (English)	14,000
Ash (American)	12,000
Beech	10,000
Birch	10,500
Cedar (West Indian)	8,000
Elm (American)	10,000
Greenheart	20,000
Lancewood	15,000
Mahogany (Honduras)	11,000
Oak (English)	11,500
Oak (American)	11,000
Pine	8,000
Teak	15,000
Walnut	12,000
Whitewood	8,000

It is interesting to note that greenheart and lancewood are the strongest timbers to resist actual breaking strains, which is, of course, owing to the large amount of temporary change of form they will suffer before rupture takes place.

Rupture by cross breaking is the most common fracture in wooden structures, and the fault is more liable to occur in the centre than at the ends of a rail.

At that point when temporary set leaves off and permanent change of form is set up, we have what is called the elastic limit. This, as might be supposed, has more to do with deciding the strength of a piece of timber than its breaking strain. It has been found that the bad load which causes the material to reach the limit of its elasticity is in proportion to the strain. It has also been found that the load being in proportion to the strain, therefore, the stress also bears a definite relation to the strain when considering the elastic limit. This ratio of stress to strain is called the modulus of elasticity, the term "modulus" being used in the same sense as in "modulus of rupture."

Timber being such a variable material, it is extremely difficult to define at what particular point the limit of elasticity is arrived at. It will be assumed as the set which is 1/2000 of the original length, and is, roughly, from one-third to one-fourth of the breaking weight.

The modulus of elasticity of any substance is that load which would double its length on the supposition that the elongation was proportional to the stress (as in reaching the elastic limit), and that the cross section of the bar was of unit area, or one square inch, and assuming the elasticity to remain perfect so long.

The modulus of elasticity of some timbers is given below, the question of rough averages applying as before. The load is expressed in pounds per square inch.

Ash (English)	1,600,000
Ash (American)	1,600,000
Beech	1,300,000
Elm (American)	1,600,000
Birch	1,400,000
Greenheart	1,450,000
Mahogany (Honduras)	1,400,000
Oak (Englsh)	1,750,000
Oak (American)	1,700,000
Pine (yellow)	1,600,000
Pine (pitch)	2,100,000
Teak	2,000,000
Walnut	500,000

The modulus of elasticity affects the resistance to bending or deflection, which is made up of tension on one side and compression on the other, and is used in calculations where the working stress must be below the limit where a tendency to bend commences.

When a bar is strained within the elastic limit, the work performed necessary to produce this is equal to the strain multiplied by the mean stress which produces the strain, or it may be, perhaps, more simply defined as the resistance up to the elastic limit.

The elastic resistance may be obtained by dividing half the square of the maximum elastic resistance in connection with the elastic limit, so the ultimate resilience refers to the work done up to the point of rupture.

After the elastic limit has been reached, the structure takes upon itself a permanent set, in which state the material is weaker and will break under a smaller load than before it was strained. This is a property associated more properly with metals, as the permanent set can generally be removed and the original elasticity regained, the success of the annealing depending upon the amount of strain beyond the elastic limit the material was subjected to.

In calculating the load on a piece of timber it is also necessary to know its own weight. This may be easily calculated if the specific gravity is known, which is the relative weight when compared with an equal volume of water at a stated temperature and pressure.

Digitized by Google

The following figures give the specific gravity and weight per cubic foot of a few of the more important timbers:

	Specific gravity	Weight per cu. foot in pounds.
Ash	.7	47
Beech	.7	44
Birch	.7	44
Cedar (West Indian)	.75	47
Elm (American)	.75	47
Greenheart	.93	58
Mahogany (Honduras)	.56	35
Oak (English)	.7	55
Oak (American)	.8	55
Pine	.5	36
Teak	.75	56
Walnut	.7	44
Whitewood	.37	24

INTERNATIONAL EXPOSITION AT ROUBAIX.

The international exposition to be held at Roubaix, France, from April to October, 1911, will offer an excellent opportunity to American manufacturers wishing to extend their trade relations. As the Department of the North is the most industrial district in France, the field for American goods of all descriptions is of particular importance. By the system thus advocated groups of the smaller manufacturers could combine and have one stand for exhibition, thus decreasing the cost of display.

Manufacturers of labor-saving tools, gas and gasoline engines, automobiles, etc., would find it of considerable benefit to make use of this occasion. This exposition will be visited not only by French people, but, on account of the proximity of Roubaix to the Belgian frontier, there will be a considerable number of Belgian visitors.

American manufacturers who intend to exhibit at the Brussels Exposition in 1910 could conserve a part of their display and re-exhibit it at Roubeax in the spring of 1911. This plan would seem feasible, owing to the fact that Brussels is but 100 miles from Roubaix. By acting on this suggestion they would be able to cover two expositions with one display, and with very little added expense to the original cost of preparation and shipment from the United States.

Fire destroyed the carriage shop of Elmer E. Rowe at Ellsworth, Maine. Loss, $2,500. Partial insurance.

MACHINERY ECONOMY.

The necessity for close figuring applies with some force to the machinery used in the carriage wood working departments, but it is more important to see to it that the transmitted power from the prime mover is done with utmost economy.

There are practical suggestions, made clearer in an article by W. H. Wakeman, which we offer for the suggestions of what is written about the subject.

Fig. 1 illustrates a direct-connected horizontal engine, and the dealer is assumed to be standing at the crank end looking toward the balance wheel. The crank of this engine is not seen because it is covered by oil guard 2, provided to keep oil from the crankpin within its limits, and return it to an oil filter, to be used again. The throttle valve appears just above this oil guard, but it is really several yards beyond it. The large main bearing 3 supports the balance wheel 4, assisted by the next bearing 5. At this point the shaft passes through a brick wall which prevents dust and shavings from floating into the engine room. The crank-shaft is continued down through the mill or shop, either retaining its full diameter, but made hollow to reduce the weight, or by using solid shafting of less diameter. The pulleys 6, 7 and 8 are for driving large machines or other lines of shafting.

Fig. 2 illustrates a vertical cross-compound engine, with the crank shaft continued in both directions into the mill or shop. On some accounts a horizontal engine is preferred, but a vertical engine runs with the least possible friction. Heavy balance wheels are shown at 2 and 3, but belts may be used on them if desired, provided the faces are properly turned and finished. Brick walls protect the engine from dust and dirt. The other pulleys are used for driving various machines and shafts.

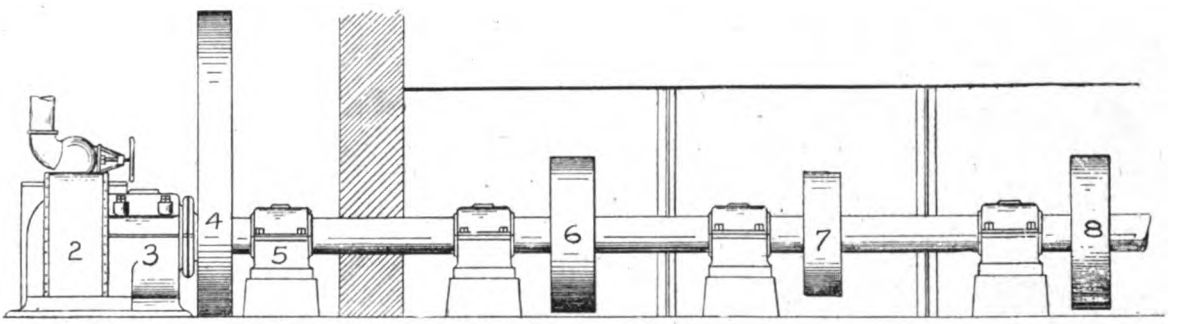


FIG. 1.

Fig. 3 shows one of these pulleys driving a machine direct. It is a clutch pulley, hence when the machine is stopped, all the load is thrown off, leaving only the main shaft turning. The machine can be started easily at short notice.

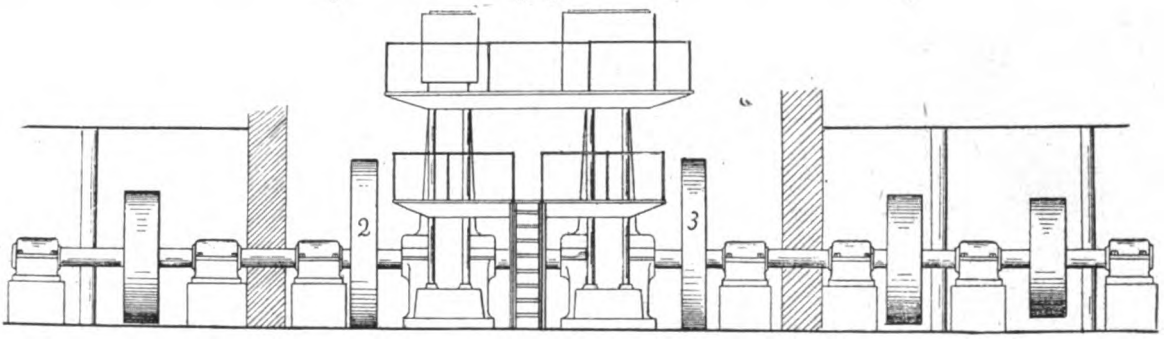


FIG. 2.

Fig. 4 shows a smaller machine that is driven from a countershaft. A clutch pulley on the main shaft drives this countershaft, hence when the machine is no longer wanted for actual use, all belts and pulleys stop with it, and friction ceases.

The principal objection to this arrangement of machinery is that clutches are thrown in without the use of common sense or good judgement in the matter, provided they are made so that this is possible. Fig. 5 illustrates a very good plan for overcoming this objection. The clutch handle is not left free to be

Digitized by Google

thrown in rapidly at pleasure, but is controlled by a long screw with a crank at one end. This compels the operator to throw in the clutch slowly, and at the same time gives him a good purchase on a heavy clutch. When used properly, good clutches will last for many years without repairs, and they prevent carrying an excessive friction load when some of the machines are idle.

My claim for this mode of power transmission is that it is more simple in operation, less expensive when first cost is considered, more durable in service, and the useless load is less than with any other form of transmitting power from an engine to the machines. It is beyond comparison with belt or rope transmission, because these features are entirely eliminated so far is the main drive is concerned.

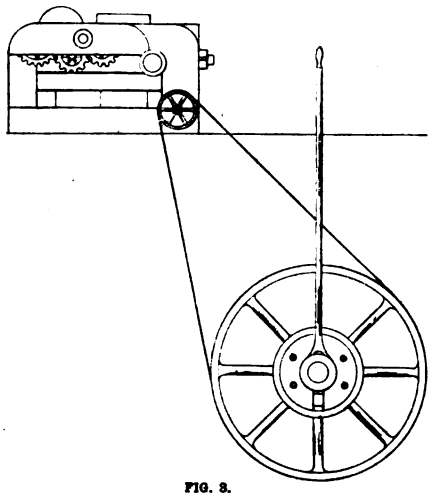


FIG. 3.

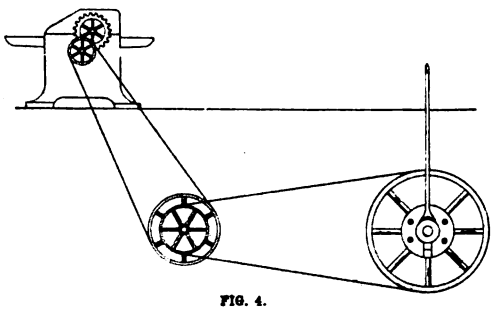


FIG. 4.

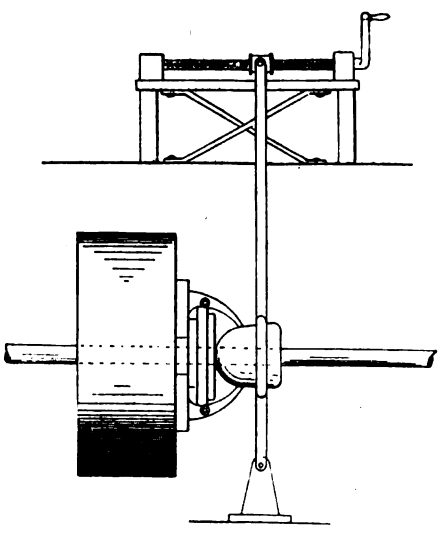


FIG. 5.

When electric transmission is used, the engine and generator must be run continuously to supply power to whoever wants it, without notice. The engine friction is the same in either case, and the friction of the main shaft, as illustrated in this article, is less than the friction load and loss of efficiency of a generator. When a machine is not wanted for service the friction clutch on the main shaft is pulled out, and everything used in connection with that machine stops, the same as when an electric motor is shut down. When a certain machine is in operation, the friction load due directly to that machine is certainly no greater, and it is probably less than the loss of efficiency due to a motor. This loss is entirely overlooked by some writers on this subject, which is unjust and unfair.

Concerning the durability of clutches, I would say there are four of these directly under my charge, and this service has extended over a period of nearly sixteen years. This plant is shut down for more than two months each year, but after making due allowance for this, it still stands for about thirteen years' service. It is run for about eighty evenings each winter, which has been continued for fourteen years.

The expense of keeping these four clutches in repair during this period, outside of my time spent in this work, has been very small indeed. Two of them cost nothing, one has required new wooden blocks, and one was fitted with a new bronze bushing about a year ago. All are in good condition at the present time.

Discussion of the special arrangement of machinery in the mill or shop, made possible by this or any other mode of transmission, belongs in another chapter, but it is quite possible to secure a convenient and economical plan, where the crank-shaft of an engine is continued through the building, provided other conditions are favorable. Of course, the engine must be on a lower level than the heavy machines, and as the latter are not wanted on the second story of a building, it becomes necessary to set the engine low accordingly. In thousands of cases the sites of manufacturing plants are naturally suitable for this layout, or can be made so at small expense. However, the main object of this article is to present a method of transmitting power which gives a small friction load, and so far as this point is concerned it is successful beyond dispute.

VANADIUM STEEL.

The lightness combining strength that is characteristic of steel, vanadium treated, makes it very useful in vehicle construction, particularly in motor car work.

Such parts of the running gear as axle, crankshaft and steering gear, and such parts of the power plant as piston rod, bearings, etc., are the danger points that need strength combined with as much reduction in weight as possible.

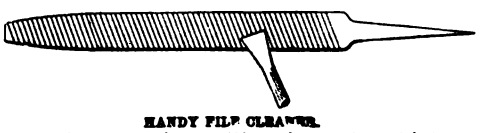
Vanadium steel is noted for its toughness of fibre, its shock-resisting quality, hence endurance under stress. It "works" easily, and is, taken all in all, probably one of the best of the alloyed steels for motor car construction. It takes a very nice finish.

The castings made from this steel are compared to carbon steel, but machine as easily as open-hearth steel.

FILE CLEANER.

A method of cleaning files, here illustrated, is so simple that it is worth trying. It is practised by many iron workers.

The cleaner is made by hammering out flat a wire nail until it is about 1/32 inch thick. It is then dressed with a file and the end squared. This operation will reduce the thickness to about 1/64 inch. To use, hold at a 45° angle to the file to be cleaned, and push across the teeth. The hard surface of file will groove the soft nail, and the effect is cleansing.



HANDY FILE CLEANER.

Suit for replevin of goods has been brought by the Deal Buggy Company against the Farmers' Implement Company, South Bend, Ind. This is one of a series of similar actions brought against the concern which succeeded the Diermyer-Ginz Company.

Digitized by Google

FLATTING VARNISH.

Flatting varnish can be bought more satisfactorily than it can be compounded by the painter, but at times when its need is urgent, and he has none of the ready-made sort at hand, he can easly make his own flatting varnish, as the quality of drying without lustre, which in its characteristic is due to the admixture of beeswax with a quick-drying varnish.

Here is a formula for making a flatting varnish that may stand as representing such formulas in general: Shred four ounces of yellow beeswax and add to one quart of turpentine. If added to cold turpentine allow it to dissolve by occasional shaking, the process requiring about one day. But the process may be expedited by using heat, having the turpentine quite warm before adding the wax; by this latter method the wax will melt in an hour or so, depending on the heat used. A water bath is good, but in any case be careful about fire. Having the wax now dissolved, have some quick-drying varnish in another vessel, say one gallon of the varnish, which must be heated, and then the warm wax solution may be mixed carefully with the varnish. Shake the mass well together, and then set it aside for a day, after which it will be ready for use. Thus it will be seen that the flatting consists of beeswax, four ounces, turpentine, one quart, and quick-drying varnish, one gallon.

While wax may be melted and added direct to varnish, that is not so good a plan as melting it in warm turpentine, and it is especially to be remembered that the mass, after beign made, must be thoroughly shaken and the ingredients well combined together. Any free wax would make a good job impossible. As this flatting varnish does its best when applied quite thin, it may be well to add more turpentine when about to use it; but see that the turpentine is well mixed with the varnish. The turpentine also helps in producing a dull or flat effect.

LINSEED OIL.

Linseed oil is obtained from the seed of the common cultivated flax, and varies in size and color, generally being of a purplish or reddish brown, while there is also a strawberry colored variety. The seed is cultivated in the northwest provinces of India, the East Indies and Russia. The oil is obtained by cold or hot pressure, or extracted by carbon disulphide, each process extracting a larger percentage of oil in the order named. The seed has to be kept for some three months before extracting the oil, which, when effected, should be exposed to the light and kept at a fairly warm even temperature. The exposure to light bleaches and clarifies the oil, and the absence of air helps in maintaining its proper condition, while the quality of linseed oil is improved with keeping.

MIXING AND HANDLING BRONZES.

A large amount of bronzing is done on motor car work, and a few words about the material may suggest some points likely to have passed out of the painter's mind.

Gold bronze is of two kinds, that which is manufactured from pure leaf gold, and that derived from a substance containing a greater or less amount of silver and copper. The presence of these two latter materials causes the bronze to quickly oxidize and blacken. Aluminum bronze partakes very strongly of the nature of gold bronze, even though it may contain none of the alloy which causes the gold bronze to discolor. The principal factor by which the pure gold color may be maintained when using gold bronze is to buy the pure gold powder. Mix the powder when it is to be applied in paint form, and the quality of the stock is known to be pure and good, in three parts pale drying japan and two parts elastic finishing varnish. An over-supply of varnish injures the natural lustre of the gold and imparts to it a washed-out appearance. A predominating supply of pale japan holds the powder in suspension better and does not react upon the color and lustre of the material. The same advice applies to the use of aluminum bronze. Both bronzes show to their best advantage when a regular gilding size is applied, and the bronze, upon the right tackiness, is applied to the size in dry form, being dusted on with either a soft bit of cotton or with a camel's hair brush. When applied this way the size should be permitted to dry down to a not very pronounced gloss in order to secure the proper burnish and the right appearance.

In the case of a gold bronze known to contain spurious ingredients, with the copper and verdigris appearance cropping out constantly, the only available remedy is to take some of the bronze and pour over it a quantity of 88° gasoline and stand aside for a number of hours, or, better still over night.—Cooper's Vehicle Journal.

EXPENSE ACCOUNT.

Assbciate Members Carriage Builders' National Association, Washington Meeting.

Following is the account of the monies expended by the associate members of the C. B. N. A. for entertainment at the Washington convention of the Carriage Builders' National Association, and the minutes of the annual meeting of the associates.

Receipts.

Received from former treasurer	$519.94	
154 contributions at $25 each	3,850.00	
From other sources	210.00	
Total		$4,519.94

Disbursements.

Gregory May Thorn Co.	$6.75	
H. C. McLear, Treas. C. B. N. A.	1,863.00	
Int. Sight-Seeing Co.	130.00	
Mt. Vernon Steamboat Co.	220.00	
John McGrath	29.00	
Momer McDaniel	193.55	
25 per cent. guarantee fund returned	962.50	$3,404.80
Balance in treasury		$1,175.14

The Meeting.

The meeting was called to order by the president, Mr. John Mc Grath and the minutes of previous meeting were read and approved.

The president appointed a nominating committee consisting of H. N. Hill, Franklin Murphy and Mr. Howells.

The following officers were nominated and unanimously elected: John McGrath, president; Henry P. Jones, vice-president; Homer McDaniel, secretary; O. E. Walker, treasurer.

Executive committee—Charles E. Adams, O. B. Bannister, Henry Higgin.

Mr. Lewis Strauss was unanimously elected to represent the association on the executive committee of the C. B. N. A.

It was moved and seconded and unanimously carried that this association recommend to the C. B. N. A. that Cincinnati Ohio, be selected as the next meeting place.

BEFORE THE HOUSE COMMITTEE.

W. J. Evans, secretary of the National Association of the Agricultural Implement and Vehicle Manufacturers, of Chicago, and H. G. Wilson, of the Kansas City Commercial Club, appeared before the House Committee on Interstate and Foreign Commerce, Washington, D. C., to argue for the passage of the administration bill. According to Mr. Evans, his association wants a law compelling railroads to insert their rates on bills of lading, giving shippers the right to route their freight and legalizing traffic associations under the jurisdiction of the Interstate Commerce Commission. If the shipper is given the right to route his stuff, the weaker railroads will get a much fairer share, according to Mr. Wilson's view of the situation.

Digitized by Google

BELT POWER.

This is a subject that will interest all power plant users, as the expense of belt renewal, especially when the belt is leather made, is very considerable. H. D. Chapman, in Power and the Engineer, speaks advisedly on the subject, and what he says is worth attention.

The power transmitted by a belt is directly proportioned to its speed. A safe rule is:

Allow one horsepower for a speed of 1,000 feet per minute, with a belt of single thickness, 1 inch wide.

This is a more liberal allowance in favor of the belt than is usually given, but will increase its life in far greater proportion than the increase in first cost.

Double belts will transmit about 1½ times as much power as single belts.

This rule applies to belts running over pulleys of equal diameter, or where the arc of contact is 180 degrees. For smaller arcs of contact, use the coefficients found in the following table:

Deg.	90	100	120	130	140	150	160	170	180	200
Coef.	0.65	0.70	0.75	0.79	0.83	0.87	0.94	0.97	1.00	1.00

To increase the power transmitted, either increase the speed of the belt by using larger pulleys, or use a wider belt.

Example: A 3 inch, single belt is running over a 24 inch driving pulley, which makes 200 revolutions per minute. How many horsepower will it transmit?

The circumference of the pulley in feet is $2\times3.1416=6.2832$ feet. As the speed of the pulley is 200 revolutions per minute, the speed of the belt will be $200\times6.2832=1256.64$ feet per minute.

For every inch of width it will transmit $1256.64\div1000=1.5664$ horsepower.

Then a 3 inch belt will transmit $3\times1.25664=3,76992$ horsepower.

If it is desired to increase the power in the above example to five horsepower, it may be done by using a wider belt in the proportion of 3.75 to 5, or in reality a 4 inch belt. The same thing could be effected by increasing the size of the pulley in the same proportion, or 3.75:5::24:32.

It would thus require a 32-inch pulley. A double belt of the same width would transmit 1½ times as much power or $1.5\times3.75=5.63$ horsepower, which would be a little more than the required five horsepower.

NEWARK WAGON FACTORY.

The widely known "Good Roads" wagon factory, situated in Newark, N. Y.. and operated by the Heywood Wagon Co., is erecting new buildings under the supervision of Mr. Frank B. Moody, auditor of the company. Some 75,000 square feet of ground space is covered in a building 553x100. The light is ample, as the 1,600 square feet of glass in the roof will testify to. The buildings are concrete construction.

Everything looks most smiling from the point of view of business prospects. There are plenty of orders in advance, but just at present dump, good roads, coal dump, and paving wagons, as also sprinkling carts and auto-trucks will confine the activities of the company.

The officers are: S. F. Sherman, president; W. A. Cook, vice-president; L. L. Cramer, treasurer, and F. B. Moody, auditor.

TALKED ON WATERWAYS.

The February business meeting and dinner of the Implement Vehicle and Hardware Association, of St. Louis, was held at the Planters' Hotel on February 14. President W. K. Kavanaugh, of the Lake-to-the-Gulf Deep Waterway Association, gave the members a talk on the deep waterway movement for the Mississippi River.

MR. STUDEBAKER INTERVIEWED.

Mr. John M. Studebaker. of the Studebaker concern. was interviewed at the Waldorf-Astoria when in New York recently. A part of what he said follows:

Mr. Studebaker said that he started out in life with a capital of 50 cents. He said that he was 77 years old. "though," he added, "my wife always gets after me when I tell my real age. You see, the secret of long life and good health is hard work. I have always worked hard.

"Two of my brothers had a little blacksmith shop in South Bend, but I decided in 1852, while I was working for a wagon maker there, that I wanted to go out to California to seek my fortune. So I built a wagon body that winter and my brother did the iron work for me. There was a company going west the next spring, and I turned my wagon over to them to pay for my share of the expenses. We had a drove of horses with us, and the Indians chased us all the way. Almost every night they would try to steal our horses. They didn't have rifles in those days, so they did not do much attacking.

"It took us five months and eight days to get across to California, and when I landed there I had only 50 cents on which to begin life. I took to prospecting, but I kept at it only three months. Then I decided to make use of my trade, and I started in making wheelbarrows and picks. After four years I had enough of it and returned to South Bend in the winter of 1857.

"My two brothers were still in business and I bought the elder out, and we went into wagon making. There wasn't any marvellous growth—just natural. The business spread, and the day before I left South Bend we received orders for 11,000 vehicles of various kinds. We sell a good deal to Europe, though not much to England. South America is our biggest foreign customer and the Argentine Republic is the chief part of that. A friend who just got back to-day from the other side was telling me he hired a carriage at Jerusalem and found it was one of our make. We turn out 400 different kinds of vehicles.

"What has been the effect of the automobile on the carriage business?" Mr. Studebaker was asked.

"Well, it has practically killed the fine vehicle, but it has increased the output of the medium class article."

FIRE WAS BLESSING IN DISGUISE.

The fire in the plant of the Racine Manufacturing Company seems to have been a blessing in disguise. The Journal of Racine, in a recent issue, tells about the new plans of the company comprehensively, and we quote from it in part:

As soon as possible the wreckage of the old buildings will be cleaned up and large four story structures erected on the standing foundation walls and they are to be strictly fireproof, of brick and steel and equipped with the latest sprinkling system. It is expected that the first of the buildings will be completed by May. The capital stock will be increased to $400,000. Ellis Gittings, for twenty-one years with the J. I. Case T. M. Co., will have charge of the sales department.

Since the fire the company has equipped the new building saved and put in a fire sprinkling system. They now have 510 men employed and will soon engage 200 more. They have started under way 3,000 to 4,000 automobile bodies, and things are rushing.

It has not been fully determined whether the office buildings will be located on the same corner where the one destroyed stood or not, but it probably will be. The company will continue as before to manufacture runabout bodies; landaulets, limosines, coupes, tops, etc., and within a year will again employ 1,200 men.

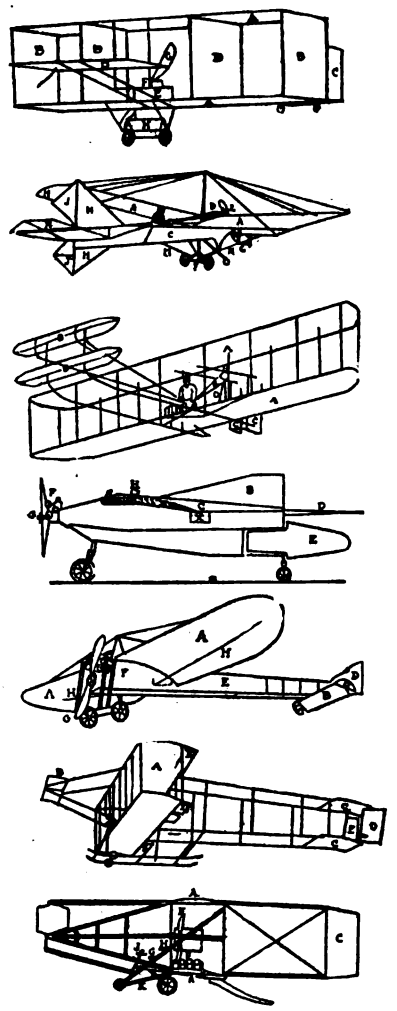
F. F. Blandin will continue in the capacity of president and George Jagers secretary and manager.

Abresh-Cramer Auto Truck Co., Milwaukee, Wis., has been incorporated with a capital of $20,000.

Digitized by Google

PRESENT TYPES OF AEROPLANES.

Judging from the present position of the science of mechanical flight, it appears that the flying machines of the future will be aeroplanes, machines in which one or more flat or slightly curved wings are driven at a small angle of incidence through the air. Although investigations are still proceeding with regard to ornithopters—machines in which flapping wing flight is attempted—no very tangible advance is being made. The mechanical difficulties in the way of immitating bird flight appear to be too great, and, moreover, the action of the bird's wings and feathers in natural flight is by no means thoroughly understood. Experiments with helicopters—machines designed to lift direct into the air by means of propellors revolving horizontally on a vertical axis—appear to be almost equally barren of result. No aerial propeller has yet been designed that in combination with any existing engine would be capable of lifting directly against the force of gravity. At the Rheims aviation meeting the machines entered were, without exception, aeroplanes. They were, further, limited to monoplanes and biplanes, there being no representatives of the triplane nor the quadruplane.



From top to bottom read: Voisin, Antoinette, Wright, R. E. P. Monoplane, Bleriot, Improved Voisin, Cody Biplane.

The resemblance of a monoplane to a bird gliding on outstretched wings is obvious, and the flight of the machine depends on the same principles as does the flight of a bird. The only difference is that between mechanical power and the mind of a man on the one hand, and on the other the muscles and instict of a bird. The monoplane also resembles the single-surface kite, flying at a slightly inclined angle, the string holding it against the air current; only in the monoplane, in place of the string pulling it, there is a propeller screw.

An important consideration in flying machines is lifting power. This depends upon the superficial area of the planes, but the planes have to be of a certain shape. Lifting power depends greatly upon the length of the front or entering edge of the planes. One object in having more than one plane, one over the other, is to increase the total length of the front edge without the necessity of having an enormously wide machine. Further, Hargrave, the inventor of the box kite, showed that the kite with two plane surfaces was more stable in varying winds than the ordinary kite, and it has been supposed, therefore, that a biplane is easier to maintain in equilibrium in flight than a monoplane.

Monoplane and biplane secured fairly equal honors at Rheims, and in the first flush of surprised enthusiasm caused by this sudden success of the monoplane, whose achievements had been far outclassed by those of the biplane until Mr. Latham came into prominence, it was said that the monoplane would be the machine of the future. It is far more likely, however that development will proceed along both lines, and that just as there are many types of sailing ship and steamship, so also will there be various types of flying machines for different purposes. Taking the monoplane first, the machine on which M. Bleiot crossed the Channel is remarkable for the small area of its planes, or wings. The main wings are fixed to a central longitudinal body. The framework of the wings and of the body consists of ash and poplar covered on both sides with fabric, and is braced with piano wire. The span from port to starboard of the wings is 25½ feet, the surface 150 square feet. At the rear of the body is situated a horizontal tail-plane 6 feet wide and with a surface of 18 square feet. And this tail-plane carries on either side movable wing-tips that act in unison as an elevator, or one can be depressed and the other elevated to correct lateral stability.

When wheeling a flying machine behaves in the opposite way to a road vehicle. The side of a flying machine on the outside of the turn cants up, and in taking a sudden turn this canting is dangerous. There are various methods of preventing this. In the Wright and the Bleriot machine, for instance, the rear corners of the main planes are flexible, and can be alternately depressed or elevated. When wheeling to the right the driver depresses the left extremity of the wings, and the right extremity bends upward in unison. The machine then keeps on an almost even keel. M. Latham obtains the same effect by having movable winglets projecting back from the rear of the main planes. The Voisin machine has no device to prevent this canting, and as a consequence, turning movements must be made in a wide circle, otherwise the machine would be upset. But the Farman machine, which is an improved Voisin, has movable "ailerons" like the Antoinette, and there can be no doubt at all that this constitutes a real improvement on the Voisin.

The Wright biplane differs from the French biplanes in that it has no tail or equilibrator. The Wrights contend that automatic stability can only exist in a relative degree. In the end they say, stability depends on the skill of the aviator. The weight of the Wright machine, with one aeronaut, is 968 pounds. The supporting surface has an area of 538 square feet. The ordinary flying speed is about forty miles per hour.

The addition of the tail in the Voisin biplane necessitates additional driving power. Whereas the Wright machine can fly with an engine of twenty horsepower, or even less, the Voisin machine often fails to ascend with fifty horsepower. The necessity for this greater power entails a number of obvious disabilities, but these disabilities would not greatly matter if the Voisin machine were, automatically stable. It should be pointed out that the Voisin machines, with their box-kite tails, while in a high degree longitudinally stable, are not stable laterally. Complete automatic stability would indeed be an enormous advantage, but at the best it can only exist in a relative degree.

BUILT FIVE NEW MODELS.

The Embree-McClean Carriage Company, St. Louis, has built five models for the 1910 automobile trade. They are to be exhibited at the show.

Digitized by Google

PROGRESS IN AERIAL NAVIGATION.

This age will soon see passenger ships navigating the air. The organization of the Deutsche Luftschiffarhts-Aktiengesellschaft was effected in Frankfort on November 16, 1909. The 3,000,000 marks ($714,000) necessary was oversubscribed; one-sixth each of the stock was taken in Hamburg, Frankfort and Munich, while in Baden-Baden 100,000 marks was subscribed privately and 50,000 marks by the city. The company, says Consul T. J. Albert, intends to promote aerial navigation generally and the operation of air ships as vehicles for the conveyance of passengers. The president is chief mayor of Frankfort, while there are 26 other directors from Dusseldorf, Cologne, Stuttgart, Essen, Elberfeld, Mannheim, Munich, Leipzig and Hamburg. It is proposed to establish air-ship stations in the cities mentioned. Frankfort will be the seat of the company and receive the two first airships, namely, Zeppelin IV in April, 1910, and Zeppelin V in June, 1910, if the air-ship station there is finished. If not, in order to make the enterprise lucrative, passenger trips will start from Friedrichshaven, the original and present station of the Zeppelin ships, and the first halting place and station will be Baden-Baden. Ample capital has been supplied at that city to lay out an airship station and anchorage ground as vast as that projected at Frankfort. The next station will be on the coast of the North Sea, probably Hamburg.

The fourth in the series of Zeppelin ships will be built by the Zeppelin Air Ship Construction Company for the newly founded German Air Ship Company (Deutsche Luftschiffarhts-Aktiengesellshaft). It will be specially constructed for the transport of passengers to different parts of Germany and fitted with three gondolas, so as to afford room for a number of persons. It will have the capacity of 20,000 cubic meters of gas, and will considerably exceed its predecessors in size. It will vary from them in other respects, especially in framework, which will be constructed of a new alloy called "electro-metal," instead of aluminum. This new alloy is said to possess great durability and to have a most favorable specific gravity. It is not yet determined whether the new ship will be fitted with two or three motors. However, the motor power will be such that the work of two motors will be sufficient to give the ship the necessary speed. In case the third gondola shall be free for the occupation of passengers, 40 persons will be the number that can be transported.

COSTS $20 A MONTH TO RUN AN ELECTRIC.

In the light of the general lack of information among salesmen as to the cost of running a car, a report just compiled by the Anderson Carriage Company, of Detroit, is of interest.

For instance, the total mileage of eighty-eight Detroit Electric owners for 1909 was 362,280 miles, a distance equal to fourteen and one-half times the world's circumference. The average total cost—including repairs, tires and battery maintenance—to each owner was $.014—1 cent and 4 mills—per mile. This, the records show, is divided as follows. Repairs, $.0019; tires, $.00831; battery, $.0087.

This cost, of course, is aside from the cost of the electric current and on this the investigation of the electrical company at Detroit shows that the average cost to each owner of the cars charged during the year was $5.24 per month.

On the basis of the cost of these eighty-eight owners of Detroit Electrics, it would appear that an electric carriage should not—and ordinarily does not—cost in excess of $20 per month. That figure would include $5.24 for current, and would mean that, at the average repair, tire and battery cost of $.14 per mile, the car could be run 1,000 miles each month—a little better than thirty miles daily.

The Indianapolis (Ind.) Auto Top and Rubber Tire Company, capital $15,000, has been incorporated by F. L. Palmer, A. K. Zeigler and E. E. Wilkes.

BALL OR PLAIN BEARINGS.

We believe there is a general impression that with certain limits ball bearings reduce friction. But those more or less accepted notions become a habit. It now seems that one or two engineers are by no means satisfied that the extra cost and complication of a ball bearing is justified. Two engineers have ridden bicycles, one with plain and the other with ball bearings, and found no difference in the ability to climb hills, providing proper lubrication was maintained, and it is admitted that the friction set up by a properly designed plain bearing is only 1 per cent., so that the saving to be effected is not very great. The successful application of ball bearings is controlled to a very large extent by strict attention to the entire exclusion of water and dirt. The only really successful way of doing this is to cram not only the bearings themselves, but all the space in the housing surrounding them, with a suitable grease, which must be free from acid.

The best way to prevent dirt and moisture getting in through the joint between the stationary and the revolving part is to make a mechanical joint as well as possible with leather washers, and then to force, by means of a grease pump, an excess of grease into the housing until it starts to ooze out at the joint. Dust and dirt will then stick to the grease and somewhat harden it so as to form a mechanical barrier against dirt and water, and the grease in and around the joint makes it almost air tight. The necessity for having the whole housing itself full of grease is also to exclude the air, as, owing to differences in temperature in the atmosphere, moisture will condense upon the cold ball races if there be any dampness in the air inside the housing. Ball bearings were never popular on carriage axles. The question is an interesting one.

RESILIENCY IN WHEELS.

R. C. Parsons, M. A., in a recent paper says: It is clear that, in order to replace the air spring of the pneumatic tire most efficiently, not only should the rim be as light as possible, but also the resilient medium should be situated as near the rim as practicable, and not in the hub. It was, therefore, considered necessary to make the centre of the wheel absolutely independent of the rim. In addition, it was deemed desirable that it should roll freely inside the rim, without any means of attachment between the two, thus differing from many forms of spring wheel that have been proposed. In order to carry this principle into effect, it was found necessary to attach the resilient material rigidly, in the form of independent members, either to the outer rim or to the wheel centre, and to allow their other extremeties to bear respectively against the wheel centre or on the rim, they being kept in position sideways by circular flanges attached either to the wheel centre or the outer rim. Whichever method is adopted, the wheel centre will rotate slightly more rapidly than the rim, and this difference of the number of revolutions, termed the creep, is allowed to take place without hindrance of any kind.

THE HOWELLS FIRM CHANGES HANDS.

Since the death of Mr. F. S. Howells some important changes are noted. Mr. Howells was a member of the firm of Howells Bros., 58-60 Worth street, New York Cty. dealers in carriage cloths, trimmings and carpets. He had been in poor health for a year past. but was at his office until December 17, after which time he was compelled to relinquish business affairs. He was very well known in the carriage trade, having been associated with Howells Bros. for twenty years, and prior to that was with his father, Henry C. Howells, in the same line of business. The business of the concern, since the death of Mr. Howells. has been taken over by the Fine Woolen Co., which will continue operations with George L. Taft as president and William B. Conklin, a former partner in the firm of Howells Bros., secretary and treasurer.

Digitized by Google

OBITURAY

EVERYONE will read of the death of Charles B. Sherron with almost the shock of personal bereavement. No one was more widely known in the trade. His passing away marks one more broken link binding the past with the present, as it was his fate or fortune to live, and be one of the active factors in the transition period between the old and the new order of things. He was a contemporary of the founders of carriage building in its finer aspects, he was an associate of those who are now the viril leaders of the transition period. Living, he was the storehouse of the past and present, dead his memory embalms that history.

Personally Mr. Sherron was a loveable character. His charity for the foibles, and his praise for the merits of his contemporaries were traits of a fine moral fibre based on sincere conviction, and grounded in principles whose inspirations were drawn from a religious life that was lived as well as professed.

The chronological events of his trade career are so completely set forth in the account of his activities as written by a careful biographer in his own journal, The American Vehicle, that we avail ourselves of it, as we could from our own recollection add or subtract nothing therefrom. The writer's personal relations with Mr. Sherron were so cordial and of such long duration that his passing away is felt with especial personal sorrow.

Charles B. Sherron was a native of Philadelphia and was born on February 3, 1850. After a varied career during his early years, which were filled with many vicissitudes and hardships, at the age of 20 he entered the employ of the late I. D. Ware, publisher of the Coachmaker's International Journal, which afterward became the present Carriage Monthly. From the position of office boy he soon rose to be the traveler for the house, and made a splendid record on the road, so much so that his work attracted the publishers of The Hub, of New York City.

His employment by The Hub started in September, 1876, and so great was his success that the management made him the general manager of the paper, but the deceased was in those days in love with road work, and on his request he was again made the traveling representative.

In February, 1880, the Coachpainter secured his services as editor and manager, a position he held for nearly three years, when he, for the only time in his history, forsook the carriage trade and assumed the management of the Philadelphia office of the Shoe and Leather Reporter, a position that he held until 1885 when The Hub again engaged his services.

During his connection with The Hub, Mr. Sherron had become known and beloved by Lawson Valentine, the varnish manufacturer, who induced him to give up his trade paper work and for a time he sold the varnish made by this celebrated man, but the call was too strong and in July, 1888, he became editor for Varnish, at that time owned by Mr. Valentine.

From that date until the date of his death his work was given to the development of that paper. He became successively business and advertising manager for the paper, and in 1892 closed the deal whereby he became sole owner of the paper.

In January, 1905 on account of the broadened scope of the paper the name was changed to The Americal Vehicle.

As an editor he ranked high in the profession, and the editorial expression of his paper has always been given careful consideration in the trade.

The bright philosophy of his life was shown by his writings of Pennsylvania Dutch dialect stories under the name of "Hans Sauermilch" and "Carl Schneeringflinger."

Mr. Sherron is survived by a widow and two children, John C. Sherron and M. Isabelle Sherron.

Rollen H. Bateman died February 23, in Newark, N. J. He was a member of the C. M. Post Carriage Co. Five years ago he secured an interest in the company. He was born in Adrian, Mich., 65 years ago and went to Newark in 1875. A widow survives.

James Albert Fox passed away February 21 at his home in Batavia, N. Y. cause; paralysis. Mr. Fox was born in Cattaraugus on May 6, 1829, but when he was young his family moved to Byron. There Mr. Fox learned the blacksmith trade and in 1861, with the late Albert Spaulding, opened a large carriage shop in Batavia. Surviving Mr. Fox are his wife, two sons and two daughters.

William H. Heffner died at the Charlesgate Hospital, Cambridge, Mass., on January 28. He was born in New Hanover, Pa., on November 27, 1868. He was a member of the Beacon Park Carriage Co.

John F. Pitt, founder and the active head of the carriage manufacturing business that bears his name, and one of the most prominent residents of Des Moines, Iowa, dropped dead at his home on the morning of February 3. The cause of his death was heart failure.

John Frederick Crown, of J. F. Crown & Co., carriage builders. for 47 years engaged in the business in Washington, D. C., died at his home on January 27, at the age of 72 years. Mr. Crown was born in Montgomery County, Md., and is survived by his wife and two sons.

A. E. Cartier, senior partner in the firm of Cartier, Chapman & Co., vehicle and sleigh manufacturers at Ludington, Mich., died at his home in that city March 1. The deceased was one of the leading business men of Michigan and was associated with numerous large enterprises. He was heavily interested in the lumber trade and was also president of the Northern Michigan Transportation Company. He was born in 1836.

John M. Tunis, of Newark, N. J., died suddenly on February 15, of heart disease. Mr. Tunis was born in East Madison in 1840, and lived in that locality until 1897, when he retired from business. He was engaged in the carriage business, and took an active interest in public affairs. He is survived by a widow and one daughter.

Daniel M. Chute, of Ebensburg, Pa., died February 13. Mr. Chute was about seventy-eight years of age and was a well known wagonmaker. Fifty years ago he made the first swell body sleigh used in Cambria County. Mr. Chute worked in the "Varney shops" in Chest Springs, which have long since passed out of existence. Death was due to general debility.

Benjamin Torne died in his home in Erie, Pa., February 9, after a long illness. He was aged 74 years. Deceased was born in Summit township July 16, 1838, and had made Erie his home all during life, being engaged in the carriage business for years. He retired from the business some time ago. Besides his wife, four children remain to mourn his death.

Charles Beecher, one of the oldest residents of Racine, Wis., died after a short llness from la grippe. He was 82 years old, Taking up the wagon business he was employed by Lees Brothers and in 1860 he engaged in the farm wagon and carriage business for himself and occupied a shop at the corner of State and Marquette streets. Two children survive him.

Edwin E. Sweeney, son of the late George W. Sweeney, of Nashville. Tenn., at one time a prominent business man, died at a local infirmary. He had been in failing health for a number of months. He was connected for a number of years with his father in the carriage business until ill health forced him to retire from business. He was 36 years of age.

John Schroer, at the age of 96, passed away on February 9 in Chicago. He was a wagon manufacturer.

Digitized by Google

ANOTHER CONVENTION DAILY.

George Huston, of the Spokesman, has sent out a circular announcing that his publication will issue a "daily" during the Carriage Builders' National Association convention, which will be held in Cincinnati, Ohio, the last week of September. He promises to demonstrate that the journalistic "daily" wagon will be given a popular jolt that will lift it from the rut of routine. Editor Hutchinson has had many years' experience in running a daily newspaper, and it is claimed that the forthcoming venture will contain some new and striking features that will make the boys sit up and take notice. A new departure in the business end will be the duplication of all the advertising in the daily in the regular issue of the Spokesman.

R. C. Ware is already afield for business for the Carriage Monthly Year Book, and Huston says he has begun to sign 'em up for his daily. The contest will certainly be watched with interest.

The Hud will issue, as usual, a meritorious convention issue, carefully compiled, and without prejudice to its "spread" contemporaries.

CREDITS IN LATIN AMERICA.

Consul Isaac A. Manning, at La Guaira, in reply to an American manufacturing company, requesting more specific information regarding "long-time credits." reported as being given by European houses to importers in Latin America, says:

American manufacturers and exporters have apparently magnified the efforts made by the European creditors for protection by documentation in foreign trade, for I find little evidence of this documentation. European exporters seem to follow the same commercial plan of securing information as to the worthiness of prospective customers in these countries as that followed by the merchant of the United States in his home field.

A merchant whose reputation or past commercial history is not satisfactory, and who requests credit, is treated in the same manner as a European or North American merchant; if protection of the credit can not be given the wise salesman refuses to grant it.

Credits may be three months to a year with interest after a reasonable term at 6 or 8 per cent. The buyer realizes that if he fails to pay credit ceases, and he is sure to get into financial troubles just as in other countries.

Credits are given to what are recognized as trustworthy houses only, but every seller must individually judge the reliability of the purchaser, and this knowledge can only be gained by a better acquaintance with the Latin-American merchant than is general among manufacturers of the United States.

Often North American exporters have shipped goods on "draft on bill of lading," which virtually demands cash for goods, and is no particular favor to importers. Again, if goods are shipped direct to the importer it is no protection to the exporter, as in Venezuela the party to whom goods are consigned can clear them from the custom-house, even though a draft has been sent with the bill of lading.

Many European manufacturers give direct credits, but frequently commission houses handle the credits, the only objection being the additional charge of commission, etc., which increases the cost of the article. In American exports the claim is made that these commission are apt to work both ways against the importer.

One trouble with the ordinary commercial traveler from the United States is that his employer either has too little idea of the extent of the South American field or expects the traveler to spend too short a time in each place.

There are houses doing business in Caracas, La Guaira, Cuidad Bolivar, and other places in Venezuela which have been established over a quarter of a century, are still prosperous. Many have passed the "credit" period and discount their bills at sight; others still take advantage of the time allowed by European houses, preferring to take the higher rate of interest paid in Venezuela than to discount bills at the low European rate. The commercial standing of these firms is undoubted: their ability to pay so unquestionable that it can be readily observed that a demand of the American manufacturer or merchant from whom they would buy that they pay "cash in advance" or "advance documents" hurts their commercial pride, the same as it would that of a merchant in the United States of equal standing.

ABOUT THE SELDEN PATENT.

It is thought those who take an interest in the subject may gain an erroneous impression from recent statements going the rounds concerning the relations of the Association of Licensed Automobile Manufacturers, the United States Motor Company, and the Columbia Motor Car Company, which owns the Selden patent.

The United States Company is a holding concern, and its announcement stated that its arrangement with the Columbia Motor Car Company did not include the Selden patent and that royalties paid under this patent would continue to go to the old directors of the Columbia company. The Columbia company holds some 128 other patents, which the United States Motor Company now controls. Some of these patents, it is said, cover fundamental principles in automobile construction, and the patent rights on these are to be enforced.

There appears to be a misunderstanding in regard to the amount of royalties received by the Columbia Motor Car Company as owners of the Selden patent. For some years all royalties collected under the Selden patent have been divided, three-fifths to the owners and two-fifths to the Association of Licensed Automobile Manufacturers. Last year an arrangement was made whereby the amount received annually by the owners is limited to $150,000. This represents the value of the patent to the Columbia Motor Car Company.

Last year the royalties collected under the Selden patent exceeded $1,000,000. The lisenced association did not retain the difference between this amount and the $150,000 paid to the Columbia company, but refunded a large part to its members.

Following is a list of the licensees under the patent: Acme Motor Car Co., American Locomotive Co., American Motor Car Co., Apperson Bros. Auto Co., Autocar Co., Bartholomew Co., Brush Runabout Co., Buckeye Mfg. Co., Buick Motor Co., Cadillac Motor Car Co., Cartercar Co., Chalmers-Detroit Motor Co., Columbia Motor Car Co., Corbin Motor Vehicle Corp., Dayton Motor Car Co., Dorris Motor Car Co., Elmore Co., E. M. F. Co., Ewing Automobile Co., Fuller Buggy Co., H. H. Franklin Mfg. Co., Haynes Automobile Co., Hewitt Motor Co., Hudson Motor Car Co., Hupp Motor Car Co,. Jackson Automobile Co., Knox Automobile Co., Locomobile Co. of America, Lozier Motor Co., Mack Bros. Motor Car Co., Matheson Motor Car Co., Maxwell-Briscoe Motor Co., Mercer Automobile Co., Mitchell-Lewis Motor Co., Moline Automobile Co., Moon Motor Car Co., Mora Company, National Motor Vehicle Co., Nordyke and Marmon Co., Olds Motor Works, Packard Motor Car Co., Palmer & Singer Mfg. Co., Peerless Motor Car Co., Pierce-Arrow Motor Car Co., Pierce Motor Co., Pope Mfg. Co., Premier Motor Manufacturing Co., Pullman Motor Car Co., Rapid Motor Vehicle Co., Regal Motor Car Co., Reo Motor Car Co., Royal Tourist Car Co., Alden Sampson Manufacturing Co., Selden Motor Vehicle Co., Simplex Automobile Co., F. B. Stearns Co., Stevens Duryea Co., Studebaker Automobile Co., E. R. Thomas Motor Co., Waltham Mfg. Co., Willys-Overland Co., Winton Motor Carriage Co. Amplex, McIntyre. Importers and the cars they are licensed to import and sell: Hol-Tan Company, Lancia; Brewster & Co., Delaunay- Belleville; Flandrau Automobile Co., Brasier.

Roberts Bros. Co., Fox Lake, Wis., dealers in vehicles and implements, has been succeeded by Gamble Bros.

Digitized by Google

LIABILITY INSURANCE.

The matter of liability insurance is at last becoming so widely agitated that something will come of it. At the outset, we believe, it was mildly scoffed at in this country by the employer of labor, and the labor unions were not too successful in efforts at legislation. Such liability and indemnity as was considered finally, was in the shape of protection to the employer against the pains of liability. This took the form of corporate insurance with a main object of legally contesting claims, not seeking amelioration for the injured.

New light is breaking now. The manufacturers are endeavoring through an organized effort to afford equities all around. Other agencies are also active.

The American Lumberman, among class publications, has given careful thought to the matter and much space in its pages. Its concrete energies seem to have resolved themselves into a plan, and in furtherance of so worthy a subject, and as a contribution of value, we are glad to put its plan for co-operative accident insurance for employers before our readers. Here it is:

One plan for a fair distribution of the losses from industrial accidents which seems to be fair to both employer and employe and which should prove effective if the States would take it up and pass uniform legislation may be outlined thus:

Provide by law for the organization of mutual accident insurance associations of which the membership should consist of employers and employees, the cost of participation in such an association to be fixed by an underwriting committee to be composed of an expert insurance underwriter, an employer and one representative of the employee class.

The assessment plan would not recommend itself in view of underwriting experience, and it would, therefore, be necessary to make a fixed premium which, for the employee, would be based upon his occupation with proper consideration of the specific hazard in each case. On a risk where there were adequate safety appliances and where the employer had provided every reasonable means of protection, the employee's premium would be considerably heavier than in a case where the employer was taking practically no precautions, in which instance the employer would bear the heavier burden.

The employer's share of the premium under average conditions should represent one-half of the gross premium upon the total number of employes protected by the insurance. In an instance where he provided every possible safety appliance and protection his premium might be reduced as much as 50 per cent and the difference added to the employee's share. The underwriting committee, of course, would pass upon this question and determine each case upon its own merits, and in order that there might not be any variation between the premium estimates of such associations, it would be necessary that the underwriting committee perform its functions under appointment from the state and that its report upon each particular risk, when filed, should be binding upon all associations operating in the state.

In order to encourage large industries to carry their own risks, such a law should authorize the formation of such an association among employers and employees engaged in any industry, upon the participation of not less than 300 or perhaps 500 industrial employees and at least one employer, with the provision that such organizations might employ one salaried manager or secretary, and that any excess of premiums paid should be placed in a reserve fund and carried to the credit of each member during such time as he may remain a member, to be repaid to him in cash upon the cessation of his membership, if no portion of the reserve fund should have been absorbed by losses. Losses would be adjusted by a committee selected by the members of each organization, such committee to be fairly representative of the employer and employee classes. A board of adjustment should be maintained by the state, however, and should handle all cases where a satisfactory adjustment of a loss could not be made by the loss committee of an association.

In order to bring about the universal adoption of this system, present laws should be amended so as to provide that, as between employers and employees who had entered into such an arrangement, the courts should take no notice of suits to recover damages resulting from accidents so insured against, excepting upon a certificate from the state adjustment board showing that the case could not be properly adjusted without jury trial. In any event the employer, having lived up to his part of the arrangement should be relieved from any liability for loss. The law should provide that in cases of industrial accidents in the plants of employers who had refused to adopt the system outlined the entire burden of proof in any damage suit should be thrown upon the employer. Likewise it should provide that in the case of an employee who refused to accept the benefits of the mutual association he should bear the entire burden of proof in case of accident and that all legal presumption should be against whichever of the parties had refused to participate in the arrangement contemplated by the law.

It might be advisable to permit insurance companies to write industrial accident insurance if they cared to do so under the same terms and conditions as it might be carried by these mutual associations, provided, of course, that they should abide by the adjustments of the state adjustment board in every instance, excepting as provided.

This plan would result in the better protection of employees from loss, since it places a premium upon the installation of safety devices. It would throw a heavier burden upon the employer who refused to participate in such an organization and would compel the employee, who refused to participate, to assume a much larger share of the liability to loss than the one who carried it. The money which goes to lawyers, the courts, expert witnesses, etc., would be sufficient to pay the losses and there would be a strong incentive to keep the number of such accidents down to the minimum and to improve the conditions under which men are employed. The matter of compensation for losses could be settled in a variety of ways. It might be desirable to pay for medical attention, etc., and half wages, during a period of disability, although this would be a matter upon which the interested parties could agree. It would be necessary, however, that the associations which might be organized under such a law should be informally incorporated or registered with the state and that their rules and regulations should uniformly be prescribed by the state.

PHILADELPHIA CARRIAGE AND WAGON BUILDERS.

The regular monthly meeting of the Philadelphia Carriage and Wagon Builders' Association was held in the Bourse on Friday evening, February 18.

Announcement was made of the death of Charles B. Sherron, late a member of the association, and a committee appointed to draft and engross suitable resolutions to be presented to the family.

The annual election of officers occuring at the March meeting. nominations were made, to be voted on next month.

Following the business session. Messrs. Morrow and Ronan, of John W. Masury & Son, the New York paint and varnish manufacturers, addressed the meeting on the subject of vehicle painting. Both addresses were instructive, and the manner in which the subject was handled showed that the gentlemen are experts not only in the manufacture , but in the practical application of paints and varnishes.

At the conclusion of the main speeches an informal discussion took place, led by the above named gentlemen. Many vexing problems in painting were made clear as the result of the questions asked.

The G. R. Smart Hardware Co., of Protection, Kas., has discontinued its hardware lines and will handle vehicles and implements.

Digitized by Google

UNEQUAL WEAR OF TIRES.

Two tires of the same make and quality fitted at the same time and both fitted on wheels that revolve on the same axle do not necessarily wear out exactly at the same time, according to Mr. Hill, of the Republic Rubber Co., and he goes on to explain it in this way: In the first place, the track followed by each tire may not be the same in smoothness. A preponderance of ruts, nails, glass or sharp stones may by chance be on one side of the road. But even though the road surface is equal on both sides, the tires will not always wear evenly.

This is because the contact with the road is not solely responsible. The construction of the car has a good deal to do with the matter; the way in which the car is driven; and the amount of care devoted to each tire must be taken into consideration.

If the car body is badly hung, or the wheels are not parallel abnormal friction will be developed between the tire and the ground.

The number of obstacles, such as ruts, stony patches, nails, chips of flint, and even curbstones, encountered by the right-hand tire may be much greater than that with which the left-hand tire is brought into contact. Then again, the load on the car may be unequally divided.

Moreover, the rule of the road is "keep to the right"—and the center of the road is usually higher than the sides. That means that you are running on an angle, and that the center of gravity of your car has been displaced. All of which is having its bad effect on the tires—and, as we have suggested above, the weight in the car is probably unevenly distributed. When the car turns a corner, the tire making the outer curve is subjected to by far the most severe strain.

When the brake is out of order, and acts with unusual force, the tire on the wheel least controlled is, of course, not nearly so severely strained as the other. If one rim is in a bad state, the cover fitted to it stands far less chance of giving good service than upon that the other—if the other is a properly cared-for rim.

One cover may have become spotted with grease or oil, which ruins rubber; or the car may often be left standing for a long time with one of its wheels in a gutter, thus allowing water to penetrate all the small cuts. The water will eventually work its way through to the canvas. Then the cover will, one day, burst.

Finally, one of the tires may have been traveling insufficiently inflated for a long time. Fully seventy-five per cent. of the cases of premature decay are due to this fault alone.

When two tires, alike in type and quality, are fitted at the same time and are used on the same axle, their failure to give exactly equal terms of service does not imply that one of them is in any way weaker than the other. It simply means that one tire has been luckier than the other.

RECENTLY EXPIRED PATENTS OF INTEREST TO THE VEHICLE INDUSTRY.

Patents Expired January 17.. 1910.

489,997—Vehicle Brake. Joseph B. Sweet, Buffalo, N. Y.
490,023—Whiffletree Hook. Charles E. Jones, Wheatland, Mo.

Patents Expired January 24, 1910.

490,368—Vehicle Brake. Jas. F. Sinkler, Troy, Tenn.

Patents Expired January 31, 1910.

490,661—Dumping Wagon. Jas. A. Klees, Reading, Pa.
490,672—Whiffletree Hook. James McCrudden, Flint, Mich.
490,677—Vehicle Spring. Coroden E. Pearl, North Bangor, N. Y.
490,749—Whiffletree. Robert F. King. Bozeman, Mont.
490,794—Vehicle Spring. Richard J. Skiles, Pittsburg, Pa.

Patents Expired February 7, 1910.

491,125—Two-Wheeled Vehicle. Eugene McPhee, Lead City, S. D.
491,182—Thill Coupling. Walter F. Leighton, Boston. Mass.
491,461—Wagon Body. Melville M. Baker, Chestuee Mills, Tenn.

PERSONAL AND OTHERWISE.

Miss Mabel Pitt, daughter of the late John F. Pitt, has assumed the management of her father's carriage business in Des Moines, Iowa. Miss Pitt is said to be an able business woman and fully capable of conducting the affairs of the Pitt Carriage Company.

Charles E. Cunningham, of James Cunningham Sons Company, of Rochester, N. Y., was interviewed in San Antonio, and said the larger manufacturers of vehicles are forced by conditions to take up the manufacture of automobles.

The Wilson Hardware Co., of Berrien Springs, Mich., has contracted to handle the work of the LaPorte (Ind.) Carriage Company in his territory.

Lloyd R. Maxwell has been promoted to the position of general sales manager of the Staver Carriage Company, of Chicago.

The Hercules Buggy Company, of Evansville. Ind., has been badly handicapped owing to an epidemic of the grip that has been prevalent among its workmen.

Edison says "the Lord never intended lead to be used for storage batteries or He never would have made lead so heavy," so the Anderson Carriage Company is to use storage batteries a la Edison, having arranged to secure exclusive control of the new Edison battery.

The citizens of Edgerton, Wis., are trying to raise a fund of $50,000 to establish a vehicle factory.

A praccipe in a $10,000 damage suit has been filed against the Moline Wagon Co. by the administrator of the estate of W. W. Mietz. Suit is for damages on account of death of Mietz's son due to injury in the works.

The Banner Buggy Company has just issued its banner catalogue, something big, elegant and comprehensive.

At a meeting of the directors of the Keystone Vehicle Company, Reading, Pa., these officers were chosen: President, Edward C. Nolan; general manager, John L. Coxe; assistant general manager and superintendent, H. P. Burmeister; treasurer, W. L. Davis.

There has been an uncommon demand for bob-sleds at the Dundee (Ill.) Wagon Works. They have been running twenty-four hours a day on the work.

A loving cup was presented to W. A. Rosenfield by some five hundred employees of the Moline Wagon Company. The superintendent, L. A. Moore, made the presentation. Mr. Rosenfield is the ex-president and one of the founders of the corporation.

The Shortsville (N. Y.) Wheel Company is working overtime including nights and Sundays.

The Scranton Axle Works has voted to increase its capital stock; also it has elected the following officers: S. S. Spruks, president; W. L. Connell, vice-president; Otto J. Robinson, treasurer; W. H. Courtright, assistant treasurer.

J. P. Hvid, for fifty years with the Mitchell & Lewis plant in Racine received a substantial check from the company as an appreciation for faithful service. The recipient is 81 years of age.

The Fort Smith (Ark.) Wagon Company reports the biggest year's business in its history.

John W. Buck, president of the Buck Auto, Carriage and Implement Co., Davenport. Iowa, has married Mrs. Bertha M. Smith, of Seattle, Wash.

WILL RUN FULL CAPACITY.

The C. H. Stratton Carriage Company's plant at Muncie. Ind. which has been closed for several weeks, has been started with a large force of men. According to C. H. Stratton the plant will be operated to the fullest capacity with a largely increased force.

OFFICE BOY TO SECRETARY AND TREASURER

S. M. Middlebrook has been made secretary and treasurer of the White Mfg. Co., Bridgeport, Conn., in place of the late Horace S. Wilmot. Mr. Middlebrook, at the age of fourteen, left school and engaged as office boy with the White Company.

Digitized by Google

Trade News From Near and Far

NEW FIRMS AND INCORPORATIONS.

The Jerome P. Parker Co., Memphis, Tenn., dealers in automobiles and carriages, has been incorporated; capital. $100,000.

The Russellville (Tenn.) Implement Co., to deal in implements and vehicles, has been incorporated; capital $10,000.

At Moorhead, Minn., the Star Implement & Commission Co., to deal in implements, vehicles, etc., has been incorporated; capital, $25,000.

The George H. Brett Implement Co., Ponca City, Okla., to deal in implements and vehicles, has been incorporated; capital, $20,000.

At Creston, Neb., Craig & Craig will engage in the implement and vehicle business.

W. F. Schroeder, of Plateville, Wis., will engage in the implement and vehicle business.

The Martin Wagon Co., has been incorporated at Lufkin, Tex., to build wagons; capital, $8,000.

The Edgerton (Wis.) Wagon Co., has been incorporated; capital, $50,000.

Harloff Pence Co., Madison, Wis., to deal in automobiles, vehicles, etc., has been incorporated; capital, $25.000.

Frank Miller and associates are soon to establish a wagon factory in Houston, Tex., it is reported.

W. T. Fisher, Pilger, Neb., is engaging in the vehicle and implement business.

The Standard Automobile Co., Omaha, Neb., has been incorporated; capital, $75,000.

The Southwest Motor Car Co., Kansas City, Mo., incorporated; capital, $25,000.

The Western Commercial Motor Car Co., Kansas City, Mo., incirporated; capital, $10,000.

The Hoffman-Moore Auto Co., Lafayette, Ind., incorporated; capital, $10,000.

The Citizens' Automobile Co., San Antonio, Tex., incorporated; capital $35,000.

D. F. Mason, Junction City, Ore., is about to install a new stock of implements.

The Miller Automobile Co., Jacksonville, Fla., incorporated at Jacksonville; capital $5,000.

A. A. Anderson, Malvern, Iowa, has recently engaged in the vehicle business.

Frey & Klas, Crofton, Neb., have opened a new stock of vehicles.

Hoover & Shaffer. Columbia, S. D., have decided to engage in the vehicle business.

Hamilton C. Wilson, Ottumwa, Ia., has engaged in the vehicle business.

A. E. Christiana. Kerman, Cal., is preparing to open a stock of vehicles and hardware.

Barney Cohorst, Marysville, Kas.. has just engaged in the retail vehicle business.

C. A. Hawkins, of Webster, S. D., is soon to engage in the vehicle and implement business.

Smith & Springer, Independence, Kas., are opening a new vehicle establishment.

A. P. Anderson & Co., St. Paul, Neb., has engaged in the vehicle business.

W. L. Regen is about to establish a plant at Lewisburg, Tenn.. for the manufacture of buggies.

The Olyssyn Carriage & Wagon Mfg. Co., Cleveland, Ohio, has been incorporated; capital. $50,000;

Graves & Finch, Filer. Ida., will engage in the implement and vehicle business.

Whitman Carriage Co., Detroit, Mich., has been incorporated; capital $2,500.

Lozier Motor Co., of Detroit, Mich., has been incorporated, capital $10,000.

Steinhart & Whitmore Co., Wilmington, Ill., dealers in hardware, vehicles and implements, have been incorporated; capital, $12,000.

United Electric Storage Battery Co., St. Louis, Mo., dealers in vehicles and electrical supplies, has been incorporated; capital, $10,000.

E. O. Babcock, Unionville, Mich., will engage in the auto, vehicle and implement business.

Moultrie (Ga.) Carriage & Wagon Mfg. Co.. has been incorporated; capital, $10,000.

Thomas Thomsen Co., Charter Oak, Ia., dealers in hardware implements and vehicles, has been incorporated; capital, $30,000.

Willis Young & Co., have opened a stock of vehicles, etc., at Longmont, Colo.

Hagel Wagon Spring Bolster Co.. Minneapolis, Minn., has been incorporated with a capital of $25,000.

The Union Trading Co., Oakville, Wash., is about to erect a large implement and vehicle repository.

The Clinton (Mo.) Wagon Stock Co. has been incorporated; capital, $$25,000.

The Townend Carriage Co., has been incorporated at Decatur, Ill.; capital $6,000.

The A. J. Vogle Auto Co., Cape Girardeau, Mo., has been incorporated with a capital of $2,000.

The Nobles Bros. Co., Brady, Tex., will open a stock of vehicles, etc.

Litz & Co., Supply, Okla., are opening a new stock of buggies. etc.

The Cromwelll Motor Co., Detroit, Mich., has engaged in business with a capital of $1,000.

The Haynes Automobile Co., St. Louis, Mo., has been incorporated; capital, $5,000.

The Oklahoma Auto Supply Co., Muskogee, Okla., has been incorporated; capital, $25.000.

The Tower Grove Motor Car Co., St. Louis, Mo., has been incorporated; capital, $5,600.

First dirt was thrown up on the construction of foundation for a new automobile factory at Frederick, Okla., which is to be known as the Dixie Motor Car Company, and which is to manufacture a runabout car.

The establishment of a wagon manufactory in Edgerton, Wis., with a capital of $50,000, is contemplated. Nels Halverson, superintendent of the Stoughton Wagon Company, and owner of several valuable patents, will be in charge of the corporation.

James K. Davis, of Benson, Md., has been in Chester, Pa., looking for a site on which to build a large shop for the manufacture of wagons and carriages.

The Sullivan Wagon Mfg. Co., of Troy, N. Y., manufacturers and dealers in wagons, sleighs, etc., has incorporated; capital, $15,000.

At Cleveland O., the Schoelkopf Auto Radiator Company, capital, $25,000, has been incorporated by William Schoelkopf.

Plans have been completed by Shaffer & Co.. Harrisburg, Pa., for a foundry building in which to make brass specialties. It is said that the work to be done will be largely for automobile companies.

At Penn Yan, N. Y., Barden & Robeson, manufacturers and dealers in hubs, spokes, staves, etc., capital $10,000, has been incorporated by George L. Barden, M. R. Barden and R. J. Robeson.

Digitized by Google

Mais Motor Truck Co., Peru, Ind.. capital, $300,000, will engage in the construction of vehicles of all kinds. Incorporators are Marshall G. Cochran, of Pittsburg; E. W. Spencer, of Indanapolis; Alfred F. Mais, of Chicago.

Detroit, Mich., gains another million dollar automobile concern in the Michigan Motor Truck Company. The stockholders are Herbert M. Thomas, trustee; James C. Brown, Frank C. St. Aubin.

The Jackson Carriage Co., Nashville, Tenn., has been incorporated by S. H. Neff, J. J. Christie, N. Joyner, E. G. Parrish and and the first year's output has been sold.

Whitman Carriage Co., Detroit. Mich., has been incorporated C. E. Pigford, with capital of $15,000.

Clark Motor Car Co., Shelbyville, Ind., has begun operations with capital of $2.000.

J. A. Tyrholm & Co., New Richland, Minn., dealers in implements, vehicles, hardware, etc., has been incorporated; capital $50,000.

Franklin Buggy Co., Barnesville, Ga., has been organized and incorporated to build the "improved Barnesville buggy."

Fleischmann Vehicle Co., New York city, has been incorporated; capital, $25,000.

BUSINESS CHANGES.

The name of Jess & Sturdy. Springfield, Mo., has been changed to Jess & Sturdy Manufacturing Company.

J. W. Knapp has sold his hardware and vehicle business in Osborne, Kas., to A. Gilbert

M. J. Sample has purchased the stock of vehicles, etc., of B. M. LeGrande, in South Haven. Kas.

The partnership of James V. Randall and Clarence Randall, trading as J. V. & C. Randall, Newtown, Pa., has been dissolved, and the business will be continued as heretofore by Clarence Randall.

W. H. Riser, Shelbyville, Ind., has sold a half interest in his wagon repair business to J. E. Bradley.

The Frankland Carriage Co., Jackson, Tenn., was bought in at creditors' sale by Neff & Joyner. Business will be continued by them.

Shantz Bros. & Palmer, Grand Rapids. Mich., is now Shantz Co. The officers are: Edward H. Schantz, president and treasurer; Alfred Schantz, vice-president; C. E. Long, secretary.

W. V. Elner, Wellsboro, N. Y., has purchased a half interest in the carriage and automobile shop of R. H. Davis.

Edward Doyle, of Portsmouth, O., who has been operating a wagon factory at Wellston, will move to Ironton, having rented the building formerly occupied by the Ironton wagon works.

J. W. Sargent & Son Co., carriage dealers, Worcester. Mass., has reduced its capital from $25,000 to $10,000.

H. E. Rauch and A. J. Hinkle, of Allentown, Pa., have purchased the Catasauqua carriage works, located in that town. The members of the firm are both young men, who have been engaged in this line of work ever since they were out of their knickerbockers.

Articles of incorporation have been filed by the Sterling Auto-Top Company, of Detroit. Mich., which buys outright the Auto Accessories Manufacturing Company, located at 144 Congress Street. W. B. Morley is president and treasurer; C. L. Barnes, vice-president, and W. F. Connelly secretary.

Lyon & Kelly, Augusta, Ga., have purchased the entire business of H. H. Coskery. Both firms have been in the carriage, buggy. wagon and harness business. Lyon and Kelly are automobile agents also.

The Gilbert-Wahl Vehicle Company, Owenboro, Ky., is going out of business.

Whitmore & Rogers have leased a new carriage repository at 109 South Grand avenue, Lansing, Mich., and will carry a line of vehicles and wagons. They will also handle many implements and carry in their new store many articles already stocked in their present location, 318 South Washington avenue.

Batenhorst & Sons have purchased the stock of vehicles. etc. of Simons & Co., in Cedar Rapids, Neb.

A. L. Winkie, Burnett Junction, Wis., hardware and implements and vehicles, has sold out to Frank Bogda.

Henry Wellman & Co., have succeeded to the vehicle and implement business of Wellman Bros., in Waco, Neb.

Daane & Meerdink, hardware, vehicles and implements, dissolved partnership. M. Daane succeeds.

J. H. Kruel has moved his vehicle business into a new repository in Fort Smith, Ark.

H. P. Jensen has purchased the stock of vehicles, etc., of Scherer & Dackins, in Mankato, Minn.

H. J. Noblet, Elkhorn, Wis., has re-engaged in the vehicle and implement business.

George Antram has been succeeded in the vehicle and implement business by H. P. Wolbrant, in Roca, Neb.

The Sattley Mfg. Co., Springfield, Ill.. has filed an amendment decreasing its capital from $1,000,000 to $686,100.

Engels & Wall, Highland, Wis., dealers in hardware and implements, dissolved partnership. Mr. Wall succeeds.

Taylor & Price, dealers in vehicles and implements, have been succeeded by E. W. Shortt.

At Atlanta, Ill., Allan Houser, dealer in implements and buggies, has been succeeded by Houser & Gilbert.

R. C. Flick. Yoakum. Tex., dealer in hardware, harness and implements, has been succeeded by the R. C. Flick Mercantile Co.

P. C. Jensen has disposed of his stock of vehicles, in Central City, Neb., to D. Gilbert & Son.

Pattie & Turrell have disposed of their stock of vehicles, etc. in Harris, Kas., to Adam Lankard.

J. E. McWhorter has disposed of his implement and vehicle business in Burt, Ia., to J. H. Graham.

John Smart has purchased the stock of vehicles, etc., of Battin, Crist & Co., in Orient, Ia.

W. S. J. Bure has purchased the stock of vehicles. etc., of Utley & Burruss.

Townsend Bros. have purchased the vehicle and implement business of K. D. Young, in Northville, S. D.

Fred McNitt has purchased the stock of vehicles, etc., of O. W. Cook, in Washington, Kas.

Parker Balch has purchased the stock of vehicles, etc., of Otto Michel. in Paonia, Colo.

Humphrey & Adams have purchased the stock of vehicles, etc. of Mr. Carmichael, in Doniphan, Neb.

Mr. Bell has succeeded to the entire vehicle business of Bell & Newman, in Syracuse, Neb.

R. M. Barney has purchased an interest in the automobile business of B. A. Flick, in Kearney, Neb.

George Shostrom has sold his stock of vehicles, etc., in Brady, Neb., to Carl & B. Nelson.

E. E. Teeple has disposed of an interest in his hardware and vehicle business in Gridley, Kas., to J. B. Walthal.

J. T. Wells has purchased the stock of vehicles, etc., of Mitchell & Trimbele, in Apache, Okla.

P. A. Hendricks has purchased the stock of vehicles, etc., of H. W. Haddic, in Lushton, Neb.

C. C. Smith, Mongo, Ind., dealer in hardware, vehicles and implements, has been succeeded by Smith & Haskins.

At Pisgah, Ia., J. B. Swain, dealer in vehicles, implements. etc., has been succeeded by Jones & Beckman.

Newman & Hamburg, Wonewoc,Wis., dealers in implements,vehicles, etc., have been succeeded by Lambrecht and Krueger.

A. H. Kleberg, Caroline, Wis., dealer in hardware, implements, vehicles, etc., has been succeeded by B. J. Darling.

At Muscoda, Wis., Zindel & Bons, dealers in hardware, vehicles and implements, has been succeeded by Zindel Bros.

O. F. Campbell, dealer in hardware, vehicles and implements. has been succeeded by Campbell & Thompson.

Samuel J. Lucksinger, Monticello, Wis., succeeds Lucksinger & Altman in the implement and vehicle business.

Digitized by Google

Tall & Marsden, Edgerton, Wis., dealers in vehicles, implements and hardware, have dissolved partnership. Tall & Shaw succeed.

Terrell & Turner, dealers in hardware. vehicles and implements, have been succeeded by H. W. Terrell, in Gardner, Kan.

Jenkins & Gerlach, Mineral Point, Wis., dealers in hardware, implements and vehicles. have been succeeded by Nick Gerlach.

IMPROVEMENTS—EXTENSIONS.

The Michigan Motor Co., Detroit, Mich., will establish a factory in Rochester, Mich.. with a capitalization of $100,000, to be known as the Michigan Motor Co., Ltd.

The Weyher Mfg. Co., manufacturers of wagons at Whitewater, Wis., has been reorganized. J. C. Cox was elected to succeed E. F. Weyher.

The Staver Carriage Co.. of Chicago, will open a repository and garage in Cincinnati, Ohio.

The Eby Auto Parts Co., of Detroit, Mich., has increased its capital stock from $2,000 to $5,000.

South Texas Implement and Vehicle Co., Houston, Texas, has increased its capital from $30.000 to $50,000.

The Waukesha (Wis.) Motor Co. has increased its capital from $25,000 to $100.000.

The LaPorte (Ind.) Carriage Co. has increased its capital from $100,000 to $200,000.

The Findlay (Ohio) Carriage Co. has increased its capital from $50,000 to $150,000 and will engage in the manufacture of automobiles.

The Hudson Motor Car Company, Dayton, O., plans by the middle of next summer to be manufacturing automobiles in a new factory which it proposes to erect at a cost of $400,000 in the district known as old Fairview. This announcement was made by President Roy D. Chapin.

Frank Eller, Houston, Texas, carriage and wagon manufacturer, is bringing negotiations to a close whereby he and a number of interested Houstonians will establish a wagon factory, which within a few years is hoped to be the largest of its kind in the South.

The Standard Top and Equipment Co., Cleveland. O., has probably one of the largest top manufactories in Ohio. Many additions have been made to the factory until now the company's capacity is fifteen tops a day for 300 days in the year.

The Diamond Carriage Co., of Spokane, Wash., will build an addition to its plant.

Roehm & Davidson, Detroit, Mich.. carriage goods, have incorporated; capital, $200,000.

Randolph Motor Car Co., Chicago, Ill., has increased its capital from $300,000 to $500,000.

The Woods Motor Vehicle Co., Chicago, Ill., has increased its capital from $150.000 to $300,000.

Wallace & Orr Co., Bayport, Mich., dealers in merchandise, implements, vehicles, etc., has increased its capital from $32,500 to $100,000.

Bradford & Greenwood, Cincinnati, O., auto and carriage refinishers, whose plant is at 208 Cixth Street. have closed a five year lease on the entire building and will increase their force and capacity to meet the requirements of their growing business.

The Huntington (Ind.) Buggy Company has arranged to take the building formerly occupied by the novelty works and will use it as a factory for the frames of their Storm Queen buggies.

Mayor Schnepp, of Springfield, Ill., has sold the property located on Second street to Louis Gietl, and the Gietl Brothers, carriage and wagon manufacturers, will erect a factory on the site. The new factory will be built at a cost of $5,000.

A. J. Miller & Co., Bellefontaine, Ohio., will build a brick addition 60x100, three stories, for better facilities in making bodies, canopy tops. seats, etc.

R. H. Whitford, Great Barrington, Mass., will build a new repository for wagons near his present shop.

Terrell and Garbro Co. will operate a branch plant at Jackson, Miss., investing about $25,000 in machinery and plant. Spokes, etc., are the product.

The Lamon Carriage Manufacturing Company, composed mainly of experienced carriage builders of Greenville, Tenn., are taking steps to establish a factory in Bristol.

The Falls Machine Company, of Sheboygan Falls, Wis., has increased its capital stock to $150,000. The increase is the result of a big gain in the company's business and is coincident with its embarking in the manufacture of automobile engines. The company has been manufacturing wood working machinery and recently erected a large new factory at the Falls.

The Bridgeport (Conn.) Vehicle Company will build an addition to its plant in the West End. This addition will be built on the east side of the present building. There will be three floors. The third will be used for painting, the second for storage and the ground floor for the mechanical department.

The Consolidated Wagon & Machine Company is about to erect a big building for its Utah county business on the lot opposite Taylor Brothers Company, Salt Lake City.

The Robinson-Donaldson Buggy Co., Vincennes, Ind., which has lately added automobiles to its line, has completed its large new salesroom. The new structure is an addition to the company's buggy house..

The Hercules Buggy Company has filed articles of re-incorporation. The capital stock has been raised from $300,000 to $1,000,000, giving Evansville. Ind., one of the largest buggy manufacturing companies in the world. On account of the growth of the business and extensive improvements and additions in value. the prior capitalization did not represent the volume of business. The incorporators are W. H. McCurdy, Fred M. Hills, John D. Craft, Helen E. McCurdy, Evansville; Albert H. Loeb, Chicago.

The Somerville Carriage Company has leased a building next to Proctor's Theatre, Elizabeth, N.J., and has opened in the name of the Elizabeth Carriage Company. Herbert D. Dunham, of Somerville, is retained as manager.

The plant of the Dalzell Axle Company, at South Egremont, Mass., will be moved to Canton, Ohio, having been purchased by the Cleveland Axle Company, of Canton.

Hassett & Hodge, Amesbury, Mass., carriage manufacturers. are seeking new quarters. The firm has been without a lease of its building, and as the owners, the Biddle & Smart Company, are to expand, the building is needed. The Biddle & Smart Company which has expanded several times in the past few years,will take on more business and additional help. In order to do the business coming to the firm additional room is necessary.

BUSINESS TROUBLES.

J. G. Stikeleather and J. A. Porter, of Asheville, N. C., have purchased from E. B. Atknson, trustee of the estate of W. H. Lasater, bankrupt, the latter's entire stock of vehicles and carriage supplies.

The Franklin Carriage Company, Jackson, Tenn., has been sold at auction. The plant brought $10,050. It was purchased by S. H. Neff and Mid Joiner, who expect to conduct the plant in the future.

The Hartman Manufacturing Company, of Vincennes, Ind., sued the Morrow Buggy Company, Hamilton, Ohio, J. A. and Ada Morrow, to recover $278 on a note.

The case of the Cole Carriage Co. against Hacker & Fleming, of Hartford City, Ind., has been decided in favor of defendants. Suit was for breach of contract .

The Hickman-Ebbert Wagon Co., of Owensboro, Ky., is to go into liquidation. Company was organized in 1904 with capital of $300,000.

Suit to declare the Ahlander Carriage Mfg. Co., of Provo, Utah, bankrupt, has been brought by eastern interests.

Columbus Carriage Company, Columbus, Ga., has been closed because of the foreclosing of a mortgage.

Carriage Woodwork Co., of Hamilton, Ohio, won suit against

Digitized by Google

it for damages laid at $10,000 for injury to an employee.

The stock of vehicles in the possession of W. D. Stevens. bankrupt, of Joliet, Ill., has been sold. The work came from W. D. Babcock & Co.

The United States Carriage Co., of Columbus, Ohio, has won a suit from a Pennsylvania man who bought, then refused the job, on the ground it was not what was ordeerd. The job was resold, suit brought for the difference, and won.

FIRES.

J. F. Knapp & Son., of Bement, Ill., implements and hardware, burned out.

L. H. Burks & Son., Houston, Tex., vehicles and implements, damaged by fire. Loss $25,000, fully insured.

Fire at Memphis, Tenn., destroyed the storehouse of the Edward H. Crump Buggy and Harness Company. Loss not given.

Fire at Geneseo, Ill., destroyed the Sargent Cart and Carriage factory. Loss, $10.000.

Fire at Defiance, O., destroyed the building occupied by the Defiance Carriage Company. Loss not given. The company will rebuild.

The large carriage works of Hahn Brothers, Hamburg, Pa., including over 100 vehicles. was destroyed by fire. Loss not given.

Fire at Genoa, Ill., destroyed the warehouse stocked with farming implements, buggies and automobiles of Cahoon & Son. Loss, $3,000.

Charles Miner's carriage and paint shop at Brattleboro, Vt., was totally destroyed February 10. Loss, $2,500; no insurance.

Benjamin F. Abram's carriage factory at Hicksville. N. Y. was destroyed by fire February 1. Loss about $20,000.

The Kentucky Singletree and Spoke Factory, at Dunnville, Ky., was destroyed by fire February 12. Loss not stated, partially covered. Factory will be rebuilt.

Several thousand dollars' damage by fire was sustained by the Durant-Dort Carriage Co., on February 12.

NEW TIRE COMPANY.

With Charles F. U. Kelly as the moving spirit, a new tire company is being formed in Toledo. O., to be known as the Kelly-Toledo Tire & Rubber Co., with a capitalization of $375,000, of which it is planned that $200,000 be paid in immediately the enterprise is launched. Toledo is looked to as the source for $100,000 of this latter amount. while Kelly and his associates undertake to supply the other half. The company intends to make rubber tires for pleasure cars, motor cars, motor cycles and bicycles. Tentative arrangements have been made by which the Willys-Overland automobile plant in Toledo will take a large part of the product.

NEW CLUB PRESIDENT.

At a meeting held at the Automobile Club of America the board of directors, recently chosen. unanimously elected M. J. Budlong, head of the Packard branch in New York, as president, with George W. Bennett, of the White Co., as vice-president, and C. P. Skinner, representing the Mitchell, as secretary.

GRAMM TO OPERATE TWO FACTORIES.

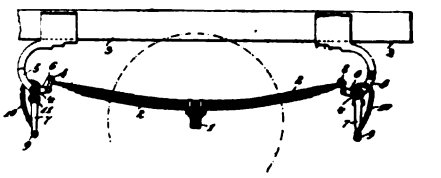
The Gramm Motor Car Co., whch has been making commercielcial vehicles in Bowling Green, O., is to have a plant in Lima, O. The latter will be the main factory, the establishment in Bowling Green being continued as auxiliary.

E. L. Wratten, for many years traffic manager for the J. I. Case Threshing Machine Company, Racine, Wis., has accepted a similar position with the Mitchell-Lewis Motor Company, of the same city.

RECENTLY GRANTED PATENTS OF INTEREST TO THE VEHICLE INDUSTRY.

Spring for Vehicles. Ludwig Sgal and Josef Schwanda, Vienna, Austria-Hungary, assignors to Pioneer Engineering Syndicate, Limited, London, England. No. 947,653. Patented January 25, 1910.

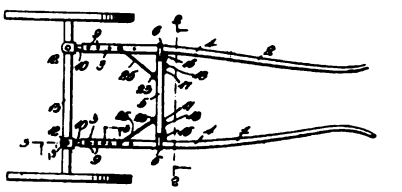
The combination with a vehicle frame and its axle, a pair of spiral springs affixed to the frame, bell crank levers fulcrumed



to the frame and engaging with one arm the free end of the spiral springs, a leaf spring bearing in its medial portion upon the axle. and a link connection between the ends of the leaf spring and the other arm of the bell crank lever.

Shifting Shafts for Vehicles. Warren A. Kitchen, New Market, Iowa. No. 947,824. Patented February 15, 1910.

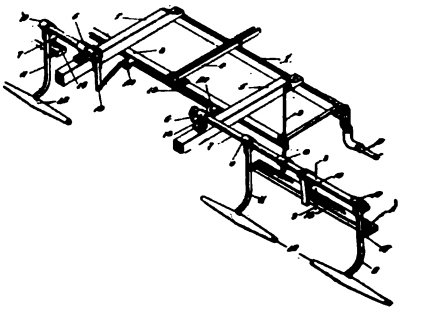
A device comprising a pair of shaft members, a cross bar between the same, clips pivoted to the opposite ends of the cross bar to freely receive the shaft members, guide bars slidably con-



nected with the cross bar and the shaft members, a sliding bar mounted upon the crosspiece, and obliquely disposed links between the ends of the sliding bar and the rear portions of the shaft members.

Draft Equalizer. William Elliott and Robert H. Schlachter, Beatrice, Neb., assignors to Dempster Mill Manufacturing Company, Beatrice, Neb. No. 947,894. Patented February 1, 1910.

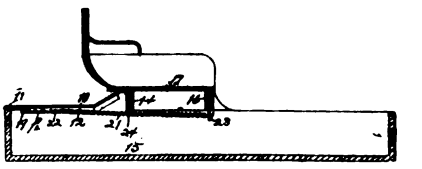
An implement in combination wit ha main frame, a rotatable draw-bar mounted in bearings carried by the frame, pendent



draft bars pivoted on the draw-bar, a bracket secured to draw-bar, an equalizing bar pivoted centrally to bracket, substantially parallel with draw bar, flexible connection between equalizing bar and draft-bars, a rigid radial arm extending between radial arm and other operative parts of the implement.

Buggy Boot Spring. Thad Sizer, Audubon, Iowa. No. 947,940. Patented February 1, 1910.

A combination of a buggy body, cross bars thereon, a boot



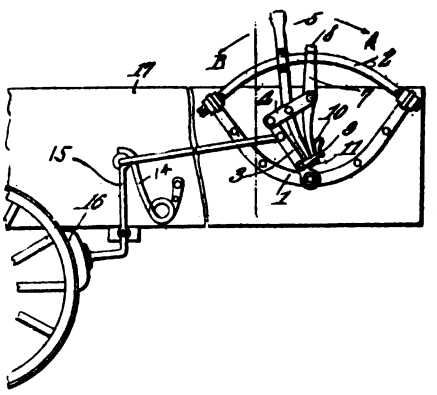
hinged to one of cross bars, cleats on boot, hooks on cleats a chain adjustably attached to hooks, a spring adjustably attached to chain, a hook on the foremost cross bar to which the spring

Digitized by Google

is attached, the spring extending across the rearmost cross bar, and a wear plate on rearmost cross bar adapted for engagement by the spring.

Vehicle-Brake Lever. Joseph M. Custer, Copper Hill, Va. Patented February 1, 1910.

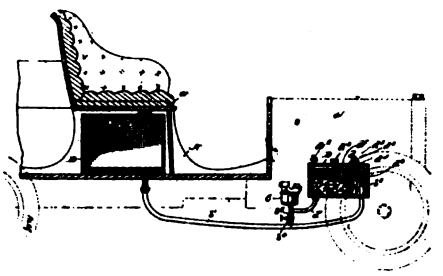
A device comprising a frame having an arcuate arm; an auxiliary lever pivoted to the lower portion of the frame and temninating below the arm; a grip arranged at its upper end to bear



frictionally upon the arm; a connection between the intermediate portion of the grip and the auxiliary lever; an operating lever located between the grip and the auxiliary lever and pivoted intermediate its ends to the connection; the lower end of the grip being engageable by the lower end of the operating lever to break the frictional hold of the grip upon the arm.

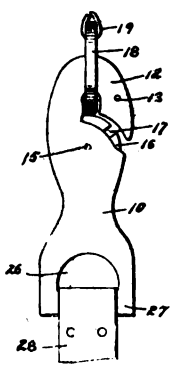
Gasoline Feed. Albert W. Hofacker, Bottineau, N. D. No. 948,279. Patented February 8, 1910.

A device comprising a carbureter, a fuel tank, an auxiliary fuel tank upon the opposite side of the carbureter from the main fuel tank and near the carbureter, the top of the auxiliary tank



being at approximately the level of the bottom of the main tank, a pipe leading from the bottom of the main tank and discharging near the top of the auxiliary tank, a pipe leading from the auxiliary tank to the corbureter, a strainer within the auxiliary tank between the openings of said pipes, a branch leading from the first named pipe to the carbureter, and a valve in the branch pipe.

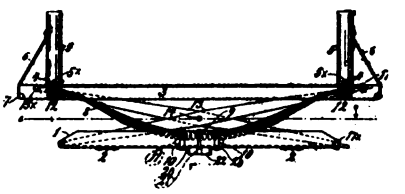
Whiffletree Hook. Jairos M. Tappan, Luther, Mich. No. 948,354. Patented February 8, 1910.



A device comprising two sections, a hook formed upon the outer extremities, the end of the hook being spaced from the sections to provide a ring-receiving channel, a boxing formed intermediately of the sections adjacent to hook, a disk rotatably disposed in boxing, the disk having a radial recess formed in the periphery, a plurality of V-shaped notches formed in the periphery of disk, a reciprocatory bolt mounted between the sections and having a V-shaped extremity for engagement in notches, and a spring disposed between sections and engaging against the inner extremity of bolt to normally retain the same in frictional engagement with disk.

Spring Wagon-Bolster. John L. Hagel and August Hagel, Dawson, Minn. No. 947,815. Patented February 15, 1910.

The combination with upper and lower bolster sections, each formed from a pair of angle irons having their vertical flanges reversely disposed, so that they are adapted to overlap with intervening spaces, bow-shaped springs interposed in the spaces between the horizontal flanges of the angle irons and yieldingly supporting the upper bolster section from the lower section, an apertured tumbler trunnioned between the ends of the angle



bars in one end of the upper section, a similar tumbler trunnioned there below between the ends of the bars in the lower section; a pair of equalizing levers pivoted together near their middle and having each one end slidingly inserted in one of the apertures in the tumblers and the other end pivotally connected to one of the bolster sections near the end of the section having no tumbler; means for holding the middle of the bow springs secured to the lower section, and guiding means on the upper section for the ends of the springs.

WIND SHIELD WIDTHS.

Little attention has been paid to the question of wind shield widths, says Motor World. It is not unlikely that before long the subject will require definite settlement. In addition to the need of as great a measure of standardization as is possible of accomplishment from the standpoint of economy in production and satisfaction in use, it is a fact as yet little commented upon, that the width of the shield in great measure governs its protective power.

It is customery to regulate the width of wind shield by width of dash. Only in rare cases is the plan adopted of making the screen wider than the dash, although in many respects this would result in increasing efficiency. The importance of contriving the device in such a way that its height, and frequently the inclination of the upper section as well, may be regulated to suit the momentary inclination of the operator, is generally recognized. It is a fact that the actual protection of the occupants of the front seat is governed to a considerable extent by the relative position of the outer edges with regard to the seat positions.

The wider the screen, the greater its efficiency in fending off the direct air pressure due to the motion of the car, as well as in deflecting breezes which strike upon it from a forward angle. Therefore, although a widely projecting shield would be distinctly ungainly, it is evident that its effectiveness would be sufficiently improved to warrant its use, even though it be carried to extraordinary limits and reach clear out to the full width of the mud guards. As it has been found in the case of the requirements for height, inclination and distance from the face of the operator, that it is extremely difficult to fix upon set dimensions applicable with equal impartiality to all sorts of conditions, even upon the same car, it might be that the question of width would be solved to best advantage by providing lateral adjustment in some instances. Certainly it would seem advantageous to provide greater widths than at present are employed on many cars.

Digitized by Google

AUTOMOBILE TRUST FORMING.

Morgan Reported Planning Big Motor Car Merger with a Total Capital of $91,000,000.

According to reports in the daily papers J. P. Morgan is planning a big merger in the automobile manufacturing trade. Announcement has been made that his house has purchased the majority of the stock of the Everitt-Metzger-Flanders, or E. M. F. automobile manufacturing company, of Detroit, for the purpose of combining it with the Studebaker Company.

The combination of these two companies, it was pointed out, would, with the General Motors Company as the unit for the Middle West and the United Motors Company as the unit for the East, lend itself readily to any larger combination that might be contemplated.

It is in this way, Wall street recalled, that Mr. Morgan forms all his great industrial combinations. First he forms independent concerns into units and then amalgamates these units into one big entity.

These units were suggested as likely factors in a combination:

General Motors Company, controlling about one dozen manufacturing concerns, the principal being Ranier, Oldsmobile, Cadillac, Buick, Oakland and Rapid and Reliance trucks; present capital, $60,000,000; estimated yearly output, 40,000 cars.

United Motors Company, controlling Maxwell-Briscoe, Columbia and Brush; present capital, $16,000,000; estimated yearly production, 18,000 cars.

Studebaker Company, controlling the E. M. F., Studebaker and Flanders cars; present capital about $15,000,000; estimated yearly output, 15,000 cars.

Total present capitalization, $91,000,000; estimated total output, 70,000 cars. Estimated output this year of all companies in the United States, 200,000 cars.

Almost simultaneously with this announcement came another from Albany saying that the Studebakers had organized a New York company with a capital of $8,600,000, of which $3,500,000 is to be in first preferred stock bearing 7 per cent. cumulative dividends and $1,500,000 second preferred carrying also 7 per cent cumulative dividends.

The directors are F. P. Delafield, of New York; Clement Studebaker, Jr., Frederick S. Fish, Scott Brown, of South Bend, Ind., and Frederick W. Longfellow, of Riverdale-on-the-Hudson.

This company was organized, it was believed, to take over the E. M. F., but whether it is to absorb the other Studebaker concerns in Indiana and Chicago could not be learned.

E. LeRoy Pellitier, advertising manager for the Studebakers, conducted the negotiations, and it is said received a fee of $200,000 for his services.

About six months ago the Studebakers, who owned about 34 per cent of the stock of the E. M. F. Company, made an agreement with that concern to act as its selling agents. For some reason the Studebakers later sought to break the agreement. Litigation ensued, and the Studebaker Company was defeated. Then the overtures for the purchase just completed were made.

The Morgan company acted as brokers in this transaction, as it will in future deals in connection with the proposed big trust. It is understood it acted as financial agent in the formation of the General Motors Company, which controls about a dozen of the larger auto manufacturing companies and is to be the principal factor in the new combination.

Among the constituents of the General Motors Company are the Ranier, Oldsmobile, Buick, Cadillac, Oakland and Rapid and Reliance trucks companies. This company recently increased its capital stock from $12,500,000 to $60,600,000 and bought fifty acres of land near Detroit. Its estimated output is 40,000 cars per annum.

The United Motors Company comprises the Maxwell-Briscoe concern, of which W. P. Horn, a member of the J. P. Morgan banking staff is a director; the Columbia Motor Car Company and the Brush Runabout Company. United Motors is capitalized at $16,000,000 and has an estimated output of 15,000 cars per annum.

The Studebakers, it is said, would act principally as selling agents for the new combination.

TOOT TROUBLES.

As long ago as the siege of Jerusalem, when, as a last resource we are told, a horn was sounded and down came the walls, to the day of the automobile, the noise element has been overworked. The moderate and constrained toot that was put to use in the early days of the auto as a warning to those in the road, has been increased to the limit of non-endurance by the multiplication and application of freak ideas. Some of these are well hit off by a writer in an English exchange, who says:

Are we not becoming a trifle undignified in some of our most recent "horn" craze?. In the multitude of absurd and altogether babyish noises which designers have succeeded in producing by their latest efforts, they would appear to have correctly gauged the public taste, judging by the enormous number of these instruments now assailing one's ears on every side. To mention only a few of the types whch immediately come to mind—and ear—there is the coach bugle or "penny trumpet" variety, dearly beloved of every chauffeur able to get hold of one, and who plays (?) on it upon the slightest pretext; the whimpering exhaust harmonic type, which even a four-cylinder engine generally fails to operate smoothly; the exhaust whistle, which sounds as if a railway engine with asthma has strayed on to the highway; the various electrically-operated instruments, more or less inefficient; the "diagrammatic" terrors, a variety for which I can see not the slightest necessity; also the huge variety of bulb-blown species, not omitting the two-, three- and four-note variety, which, to my mind, are far more "pip-pinny" than their earlier prototype responsible for the immortal—shall we say?—nickname.

Wherefore all this craze for novelty, this desire to possess something the other fellow has not yet got?

Is there anybody who can honestly say he thinks any single model of the above bewildering array is in any way a real improvement or advance upon the dignified, deep-noted and mellow toned bulb-operated horn which was almost universally used three or four years ago? The only thing against the latter is the method of operation, which is looked upon as a trifle clumsy and out of date in these rushing times; but this defect is easily overcome by making the bulb foot-operated by pedal.

The present pandering to the more vulgar human instincts is, so far as motor "warning sounders" are concerned, a retrograde step, makes for the lowering of the whole dignity and "tone" of motoring, and in addition, is unknowingly assisting in keeping alive much anti-motorist feeling, for this reason: the human ear is a great factor in the education of the senses, and what the ear receives it passes on to the brain. In other words, the attitude of a person on any subject is controlled by his five senses of which the aural sense is by no means the least, and when offensive noises are let loose upon the public by the thousand, it is logic to argue that those noises are not assisting to disarm and overcome the anti-motorist's feelings on motoring subjects. Indeed, it but adds to his hostility, and it is not unnatural. If any of these raucous, objectionable noises were in any way necessary it would be another matter.

TO GET AT COST OF TRUCKS.

The Commercial Vehicle Users Association, of Great Britain, is considering a plan to offer cash prizes for the most satisfactory practical working results of obtaining authentic information as to the costs of commercial vehicle operation. It is proposed to offer a reward for the best economy obtained with a single light delivery vehicle of less than one ton capacity; the competition being expected to develop information which will be of value from an educational standpoint.

Digitized by Google

AUTOMOBILE SECTION

The Hub

SPECIALLY DEVOTED TO THE DESIGN, CONSTRUCTION AND FINISH OF THE MOTOR CAR

TWOMBLY PONY MOTOR CAB.

A New Idea in Motor Car Construction and Adaptation of Engine.

(Illustrated on page 424.)

Through the courtesy of Mr. Irving Twombly, vice-president of the Twombly Power Co., we are enabled to present readers with illustration of a cab and engine of his own exclusive design that possesses features that are novel not only to the trade, but to gas engine builders as well.

For one thing we believe the idea of a Hansom cab, motor-driven, is unusual. We recall no previous instance of it. The body is replete with practical ideas and was built, trimmed and painted by a well known firm of New York carriage builders after the original working draft.

It is a one-passenger vehicle, designed expressly to carry only one, and in this instance built to standing and sitting measure of the lady who owns it. It is probably unique in this regard. It is interesting to the trade, additionally, because the application of the power, the type of the engine, and the uncommon accessibility of all the parts are very valuable improvements over ordinary practice.

Eight months' time, and nearly $7,000 were consumed in its evolution and building. It is most natural that all the novel ideas have been covered by design and mechanical patents.

The body is hung very low and the frame is almost entirely aluminum and glass. The range of vision of the passenger is unobstructed front and sides. The six large plate glass windows may be dropped to the floor of the cab if desired, leaving an open space in place of window, and if the door is removed, which can be done also, the cab is converted into an open vehicle, having a canopy (the roof) for weather and sun protection.

The front door is one of the features. Its upper half is a glass panel that can be detached to raise or lower to serve as a wind or dust shield, the lower half of the door being removed; again, the door as a whole is double-handled and opens from either side with as much ease and quickness as any coach door is opened. This is a very clever arrangement of lock and hinge, and is one of the patented features. In front of and below the floor of the cab is a steel bumper that acts automatically as a severe compression brake against the front wheels. as well as a fender for the front of the cab. The mechanism of this fender-brake is one of the new features, so far alone seen on this cab. It would seem as if it would be impossible for passenger or cab to suffer in collision with this appliance.

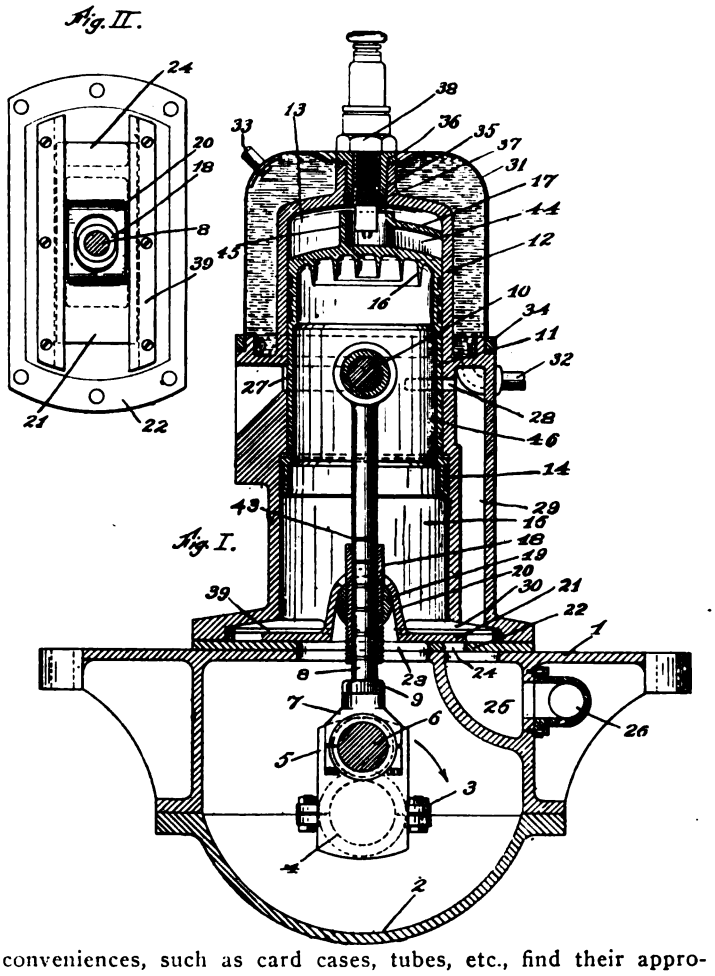
The front wheels are 36 inches and the rear wheels 28 inches diameter, all fitted with air tires. The transmission is by side chain drive to front wheels. The steering is done by the rear wheels by a very simple and efficient mechanism, and, in fact, the control of all parts under the hand and direction of the driver is most efficient and satisfactory. Even the gasoline tank under his seat has a guage on the outside of the panel, and by pressing a pin the guage instantly registers the stage of the fluid. It is never a matter of guess. Wonder it was not thought of sooner.

The body is hung on large C springs, with so much length and adjustment that the body sways as gently as it should to shock, which is absorbed perfectly. The tread is 43 inches, and the wheel base 50 inches, dimensions that make it entirely possible to turn the cab in a four-foot circle.

The mud guards are patent leather, the lamps electric lighted by switch from driver's seat, but they are also arranged for candles in case of necessity. A fine crystal roof light illumines the interior of vehicle and is under the control of the passenger.

The cab is trimmed in dark blue broadcloth and laces to match, windows have silk curtains of same color. The polite

Fig. II.



conveniences, such as card cases, tubes, etc., find their appropriate place.

Under the floor of the cab is a hot water heating arrangement connected by pump with the water cooler carried on the roof. Regulated by button the passenger can control the inside temperature at will.

The cab is painted a dark blue picked out with a white hair line.

The engine and its installation in the vehicle call for special remark, as indicating ideas marking real advancement in the art. It is a 15 H.P. three cylinder motor, and though built to fit this car, is the result of more than six years study and development,

Digitized by Google

and is so remarkable in construction that we here illustrate it much in detail. It is built on the same line as a 50 H. P. that the inventor is now constructing for his flying machine, and which will weigh (the engine) less than 100 pounds complete. The cab motor has a working speed of from 100 to 3,000 revolutions, equaling in power and balance standard six cylinders of double the weight. It slides from the car frame on rollers and couples automatically. It can be removed and replaced in the body in five minutes time. The transmission is of special design also and fool proof. It is a double bevel friction, having a true rolling motion, and is controlled by lever from top of steering wheel.

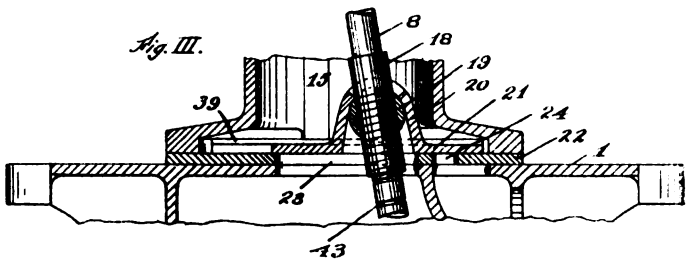
The brakes will stop the cab in its own length when proceeding at a 15 mile speed. The range of speed is from 1 to 25 miles per hour.

The Engine.

In the drawings Fig. 1 illustrates a vertical section of engine. Fig. II is a plan of the valve plate and the piston rod in section. Fig. III is a vertical section of a portion of the engine shown in Fig. I, illustrating the valve and its co-operating parts in the positions they assume when the crank has advanced 90 degrees from the position shown in Fig. I. Fig. IV shows position of valve when crank has advanced 270 degrees.

The engine is supported on a base frame so shaped as to form a crank case. The lower part of the piston is provided with secondary piston 14, working in cylinder 15. The piston is provided with heat radiating tube 16 and inlet device 17.

The piston rod passes through a sleeve 18, screw-threaded into a plug which is free to revolve within certain limits within a yoke 20 of a slide valve 21. This valve operates upon a plate 22 to close the opening 23 into the crank case at all times, and by its travel to and fro governs the opening and closing of a port 24. The port leads into a chamber 25 connected to any suitable source of explosive mixture. An exhaust port 27 in the chamber is uncovered by the piston at the end of its stroke, while the explosive mixture is injected through an inlet port 28 into the cylinder at the proper time. A fuel-conducting chamber 29 is cast in the wall of the cylinder to receive a portion of its heat and communicates with the interior of the cylinder through the port when it is uncovered by the piston, and at its

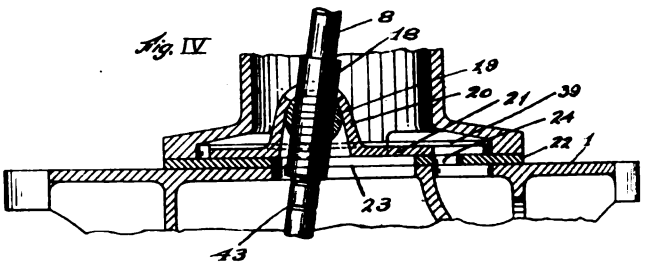


lower extremity is connected with the cylinder 15 by means of another port 30. A water jacket consisting of a wall 31 surrounds the combustion chamber, through which a water circulation may be maintained by pipes 32 and 33. This outer wall of the jacket is made of light spun copper, which is snugly fitted upon the cylinder casting, around the lower extremity of which a steel ring 34 is shrunk so as to form a water-tight joint.

The upper end of the cylinder casting is provided with a hollow boss 35 into which is screwed a bushing 36 passing through the head of the jacket wall 31 in such a manner as to firmly clamp that portion of the jacket wall between the bushing and the casting to make a water-tight joint. The boss is provided with a threaded opening 37 communicating with the combustion chamber 13, and a spark plug screwed into the bushing to operate with the inlet device 17 in the combustion chamber.

The sleeve 18 is screwed tightly into the plug 19 and held from backing out by screw, forming a gas tight joint (See also Fig. VI) which is adjustable, as by screw 42, said spring pressing upon the yoke 20 in such a manner as to tend to move the slide valve 21 laterally to take up any wear between, the plug and the yoke.

In operation, assuming the shaft 4 to be revolved in the direction indicated by the arrow, the valve 21 will be moved in a righthanded direction closing the port 24 (See Fig. III), and the pistons 11 and 14 will be brought down creating a partial vacuum in the chamber 13 and increasing the pressure in the cylinder 15. This causes the air from cylinder to flow through port into the chamber, creating pressure therein. Provided there is no fuel in the chamber 29 from previous running, when the piston has been sufficiently lowered to uncover the exhaust port



27, air will enter therethrough and fill the cylinder, and with little further travel the inlet port 28 will be uncovered and the air compressed in the cylinder 18 will rush through the chamber 29 and port 28 into the cylinder and practically displace the atmospheric air therein, which will issue from the exhaust port 27, it being understood that the areas of piston 11 and piston 14 are so proportioned that the amount of air displaced by the piston 14 in one stroke is substantially the exact amount of air required to fill the cylinder 12 and combustion chamber 13 when the piston 11 is at the end of its stroke and causes atmospheric pressure therein—that is, just enough air will be forced by the piston into the cylinder at the end of the stroke to displace whatever air or products of combustion are contained therein at atmospheric pressure. This downward stroke of the piston through 180 degrees from that position shown in Fig. I will leave the position of the valve 21 as shown in Fig. I and the port 24 will have remained closed through the above half revolution of the shaft. The ports 23 and 24 having been closed by the valve and no pressure has been created in the crank case as is usual in this type of engine. Further revolution of the crank shaft will cause the valve 21 to uncover the port 24 until the revolution shall have proceeded for approximately 270 degrees. when the valve 21 will be in the position shown in Fig. IV and the port 24 will be wide open. During this quarter revolution the pistons 11 and 14 will be raised, causing the ports 27 and 28 to be closed by the piston 11 and compression to take place in the cylinder 12. The raising of the piston as above outlined will cause a partial vacuum in the cylinder, and the explosive mixture for the next charge will be drawn in from the pipe 26 through chamber into the cylinder. Further revolution of the crank will cause the pistons to be raised and the above outlined operations continued until the position shown in Fig. 1 is reached, when the valve 21 will again close the port 24 and further revolution will produce the same results as above outlined during the first quarter, except that the air forced from the cylinder 15 into the chamber 29 will now be replaced by the explosive mixture or fuel. When the revolution has continued until the exhaust port 27 has become uncovered and the inlet port 28 is open an explosive mixture of fuel will be forced into the cylinder 12 through the channel opening 44 in the inlet device 17 so as to strike the end cylindrical wall 45 and be directed to the top of the combustion chamber 13, where this charge will mushroom and descend in such manner as to expell the atmospheric air which was in the cylinder through port 27. Further revolution will cause the same effect as previously described, except that an explosive mixture instead of air will be compressed into the chamber and if this be fixed, as by means of the spark plug, as the crank passes its center (Fig. I), the explosion caused by the firing this mixture will cause the piston to be forced downwardly until the exhaust port 27 is open and the products of combustion discharged to atmospheric pressure, when the inlet port 28

Digitized by Google

be opened and a fresh charge of explosive mixture admitted as above described and continued operation be carried on as above outlined.

It will be obvious that the construction of the inlet device is such that a portion of the fresh charge entering through the cavity 44 will always be retained therein during the upward stroke of the piston and will not mix with any products of combustion which may be left in the explosive chamber and by making the spark plug extend sufficiently near the bottom of the cavity the same will always be in a fresh mixture in no way vitiated by any products of combustion left in the chamber. This mixture is readily fired by a spark and in turn will fire any poor mixture which may be in the compression chamber.

AMERICAN-LA FRANCE TRUCK.

(Illustrated on page 426.)

The subject of illustration is a 5-ton truck built by the American-La France Fire Engine Co. Its most salient feature is the hydraulic transmission which renders the operation simple, being confined, in fact, to one lever that has the transmission forward and reverse, and the brake under control. The particulars of construction are thus described by the makers:

In the hydraulic system the gasoline engine is connected directly to the hydraulic pump, eliminating the clutch entirely.

This hydraulic system incorporates three units; the pump itself, which is run directly from the gasoline engine and which in turn transmits power hydraulicly to two hydraulic motors, which in turn transmit the power to the jack shaft and through the chains to the rear wheels.

The entire mechanism is controlled by one operating lever, both forward and reverse. The operating lever has a neutral position, which thoroughly locks the whole system, eliminating entirely the necessity for a brake. As the lever is moved forward the speeds ahead are variable from zero to maximum; the same in moving the lever backward beyond the zero point, the speeds are variable and therefore under more perfect control, both backward and forward, than any gear transmission can be.

It is possible for an operator to apparently abuse the system by throwing the lever too far forward, which in a gear transmission would bring disaster. but which in this transmission does no damage whatever.

The truck throughout is well designed, the frame being pressed steel of ample strength and the overall dimensions permitting ample loading capacity; the clearance load dimensions of the platform being 14 ft x 6 ft. The axles, steering mechanism and all parts are composed of the very highest grade materials and workmanship.

The principal dimensions are: Overall length of chassis, 18 ft. 11¼ in.; overall width, 41 in.; wheel base, 140 in.; wheel track, front, 66 in., rear 68 in., center to center of tires; rear overhang. center of rear axle to end of truck, 63 in.; loading space back of seat, 14 ft. long, 6 feet wide (variable); front end to center of front wheel, 24¼ in.; front springs, 3½ in. wide, 42 in. center to center; rear springs. 3½ in. wide, 48 in, center to center; width over hub caps, 7 ft. 2¾ in.

The steering mechanism has been considerably improved. It is placed on the right side of truck unless otherwise ordered. The speed is 10 miles per hour. The specifications of the gasoline engine make it a powerful engine for its size.

The two-ton truck is practically the same chassis used for heavy fire department automobiles and is of the sliding gear transmission, especially designed and built in their own shops.

These details and a consideration of the illustration will be sufficiently explanatory of this very serviceable commercial truck.

J. V. Hankinson, Franklin, Ohio, has sold to the William E. Pratt Mfg. Co., 91 Lake Street. Chicago, Ill., his patent rights good will, machinery, etc., in the manufacture of Miller's patent wooden wagon jack.

GOOD WORK.

The importance of careful engine finish is understood and fully practiced by foreign makers. We are coming to it by degrees in this country, but it is so much a question of cost that the progress is slow.

The accurate fitting and adjustment of parts has the most to do with the smooth running and the wear of the car. It is the chief factor in that "sweetness" of running that the salesman can tell you all about.

Anyone who has had experience with the running of all sorts and conditions of cars can tell at once, even after a few hundreds of yards have been covered, whether the car is one in which perfection of fit in the working parts is a predominating feature. What has to be kept in view in this connection is that vibration and consequent noise are the sum total of that resulting from the multitude of working parts, so that it is only by keeping to the highest practical standard of accuracy throughout all working parts that this sum total can be kept to a low figure. Working to thousandths instead of hundredths makes all the difference in the quality of the running.

It is often remarked that cars are very much quieter running now than they were, and it not uncommonly attributed to "improved silencers." But this is not actually the case, because there has been no striking change in silencer construction in recent years. The old cars were so noisy, largely because of the rattle and vibration set up by the roughly-fitted parts in the first place, and it is a mechanical axiom that a working part inaccurately fitted at the start will rapidly develop a worse state of inaccuracy.

Concerning the question of finish, this does not necessarily mean, as is sometimes assumed, a high degree of polish on any particular part; in fact, polish, as produced by handwork, is quite out of place in modern car mechanism. The machine-made part, true to 1-1,000th of an inch, will necessarily be a finished part in the truest engineering sense of the term, the trend in workshop practice being to eliminate the doubtful element of handwork altogether, and use the parts as they come from the machine. Imagine, say, a shaft or set of gear wheels machined to a perfect surface; a workman takes them in hand, and vigorously applies smooth files and emery cloth to these surfaces to obtain a fancy polish on them! He at once destroys the accuracy and perfection of fit.

Most of the castings in use are so clean, light and symmetrical that to touch them up in any way by hand would actually spoil the effect. A really good casting with its dull, uniform surfase, as every practical engineer knows, has a distinctive finish of its own. Of course, in some instances it may be desired to enamel a cast surface, in which case it would be subjected to the sand blast, although even this would not be necessary with castings made by the new metal mould process under pressure, which produces surfaces quite comparable with machined work.

LICENSED AUTOMOBILE DEALERS.

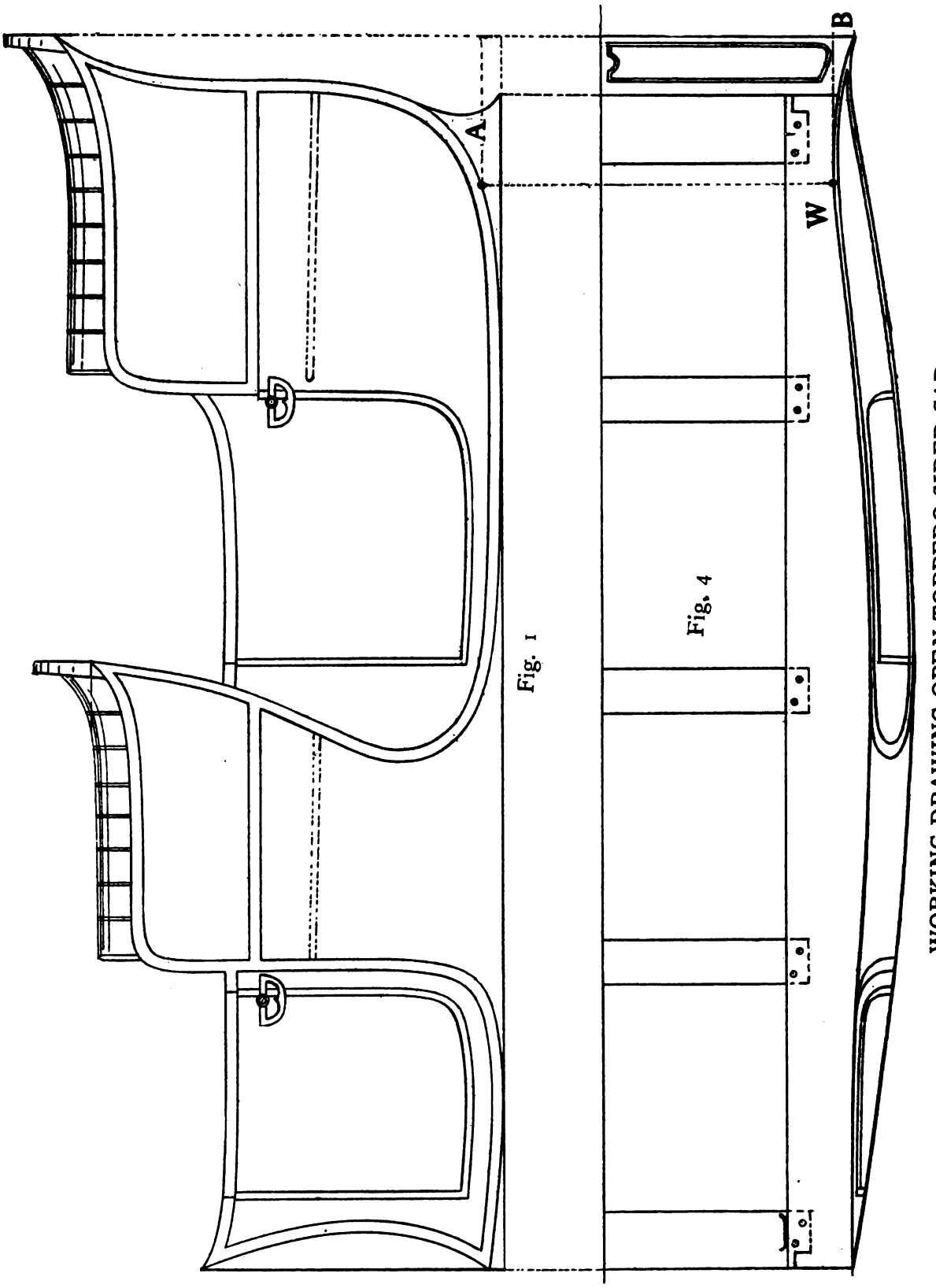
The organization of the Licensed Automobile Dealers Association of the City of New York has been completed, but with the old New York Automobile Trade Association still surviving and with an abandonment of any direct attempt by the licensed dealers as an organization, to control racing or other contests.

No small part of the difficulties which were cast in the path of the new association arose from the fact that a number of members of the New York retail trade feared that it might encroach on or interfere with their racing projects of one kind and another.

GOODYEAR STARTS CANADIAN PLANT.

Following the lead of several American automobile manufacturing companies, the Goodyear Tire & Rubber Co., of Akron, O., has established a Canadian plant. It is located at Bowmanville, Ont.

Digitized by Google



WORKING DRAWING OPEN TORPEDO SIDED CAR.
(Described on opposite page.)

Digitized by Google

Body Construction and Finish

OPEN TORPEDO SIDED CAR.

(Drawing on opposite page.)

The experience gained by motorists has demonstrated that a close body on its sides is the correct line of construction for speedy traveling.

The speed of express trains has always been a source of danger to those working on the siding of railway lines because the velocity sets up a suctional force which pulls everything of a

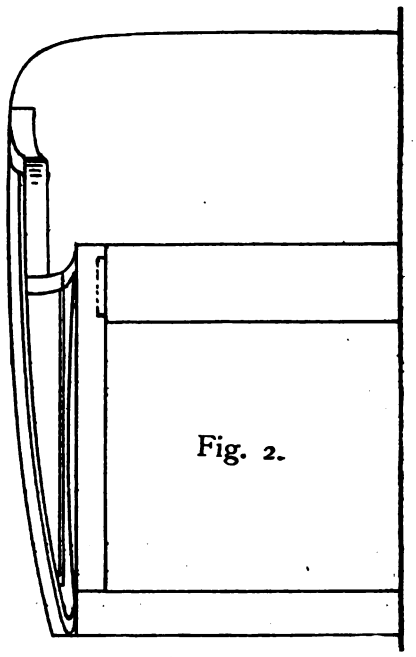


Fig. 2.

less resistance within its radius towards it. And it is this continuous eddying of the draught set up in motor traveling that has forced the necessity for doors being fitted to the chauffeurs seat as well as the hind body and for their necessity in all motor bodies.

We have thus arrived at a definite and settled point in this kind of body construction, for which we are undoubtedly indebted to the racing torpedo style of car for having the truth so forcibly brought home to the notice of builders in making the provision of doors in all open cars a direct necessity.

The method of construction in what is now termed a torpedo body is somewhat different to those that the trade has been accustomed to for so long in the open and Roi-de-Belge type. In the torpedo, the body is flush on its elbow lines from back of body to dash line, that is, it is made with one continuous side curve in the same way as a Landau body is built, and which is explained in the half plan of the body herewith in Fig. 4.

The design we give in our working drawing is of deep quarters with ogee outlines. The inside side of quarters from the seat line to the elbow rolls gives a comfortable and protective seating, while the back is well supported with a deep squabbing.

As a relief to the deep sides the doors are kept to a proportionate depth and thus lend a lightening effect to the body, while they are quite deep enough to ensure a freedom from windage draught.

The top quarters of both back and front of body can be finished in contrasting color in the painting or they can be stripped out, or they can be sham caned, any of these finishes in the painting can be adopted with public favor.

The body is designed with a free outline quite in keeping with the name given to its style. There is nothing difficult in its construction; it is framed in its quarters in the same way that a Victoria or a cab phaeton body is done and groove panelled up, the mouldings being all worked up in the solid in the usual way of high class work, which a well experienced and capable body maker is supposed to be able to successfully construct.

Fig. 1 shows the elevation design. The controlling line of the body on the hind quarter is serpentined into a full cornered curve, vanishing on the bottomside line with a faint blending.

The elbow line is of light curvature towards the corner pillar point, but is quickened into the shutting pillar line of the body. This line is curved at the corner for strength of framing as well as to allow the door to avoid the top of the wing in opening. The hanging pillar line is vertical. This pillar and the corner pillar of the back of front body are in one piece, the double curve moulding being worked up in the solid. It will be seen that the controlling line of the front quarter harmonizes with the shutting pillar line of the hind quarter and that it also harmonizes with the controlling line of the back quarter in that it blends into the bottomside line in delicate unison. The front pillar is fashioned to line with the back front pillar, and the door is also made with rounded corner, while the hinge pillar is swept to harmonize with the bottomside curve. This pillar is also got out in the solid and the mouldings worked up. It is framed into the bottomside and strip-bolt fixed, which makes an excellent job in this class of work.

Fig. 2 shows the half front of body and front top and bottom cross bars, and the cross widths of body at the points lined off from the elevation.

Fig. 4 shows the half back view of body and its cross widths. It also shows the design of panel framing and the line and sizes of the moulding. There is also a rocker panel shown at the bottom of the quarter at A, and on Fig. 1 at A. The distance the

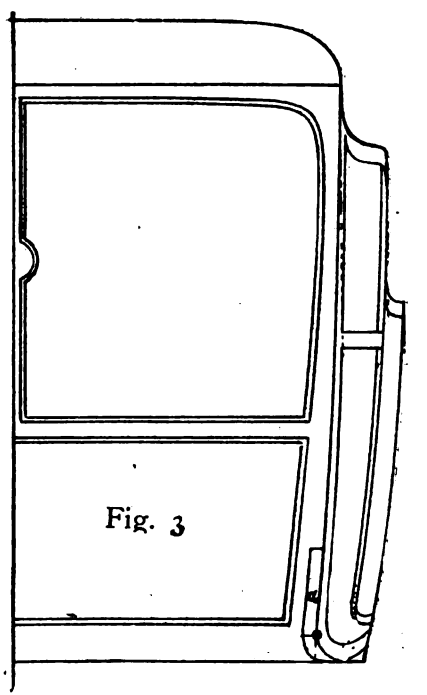


Fig. 3

bottomside is boxed back is shown in the half back section, while the panel space is shown in the elevation Fig. 1.

The bottomside and corner pillar are got out heavy enough in their depth to allow of the corner pillars and bottomsides formation being cut out and in its framing to the bottomside, it

Digitized by Google

should be strengthened with a strap-bolt fixing. The corner pillar panel A is cut back at the same time the pillar is rounded into the pattern.

Fig. 4 shows the half plan of the body in its side sweep and turnunder line projecting from the back and front sections. The corner pillar of back of body is shown in projection from the turnunder line in its framing from point W to point B.

The pillar is of course eased away from the joint into the bottomside and upwards to the elbow point so that the rounding in is thrown over a good length and its effect made invisible to the eye. The point on the plan from W to B. of course, shows the curve conjested within these vertical points of the body's framing, but here again we have to go back to cab phaeton body framing for its parallel so that the motor body and the horse-drawn carriage body are at points continually repeating themselves.

The sizes for building are: Length of body on chassis line, 8 ft. 6 in.; length of back quarter on elbow line, 29 in.; on moulding line, 27 in.; width of door, 23½ in.; length of front quarter on elbow, 26 in.; on moulding line, 24 in.; width of front door, 18 in.; width of front quarter, 6 in.; from dash to seat, 26 in.

Depth of hind quarter to bottom of moulding, 21 in.; depth of top quarter at front pillar, 13½ in., over mouldings; at back over mouldings, 18 in.; depth over the bottomside to top of door, 24 in.; depth of front quarter to bottom moulding, 21 in.; over front pillar, 11 in. over all, at back of ditto, 15 in.; depth of door over bottomside 24 in.

Depth of body at dash, 26½ in.; width of body at back on elbow line, 44 in., at bottom point A. 40 in.; width of body across standing pillar of hind quarter, 50 in.; full width of body at centre, 4 ft. 6 in. (elbow line); width across front pillars of front quarter, 50 in.; width across front of body, 44 in.

AIR COOLING.

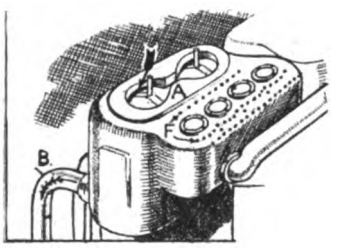
A new theory, developed under protection of English patent, for air cooling gas engines is fully described in Motor.

Such of the explanation as may be found interesting, as to the essence of the matter we produce, with such illustrations as may aid in a more comprehensive grasp of the text:

The basis of the idea is to paint the outside of the cylinder wall and the inside face of the water jacket with a chemical solution, the exact composition of which is not disclosed, but it appears to be some kind of calcium chloride solution which possesses the quality of quickly diffusing heat.

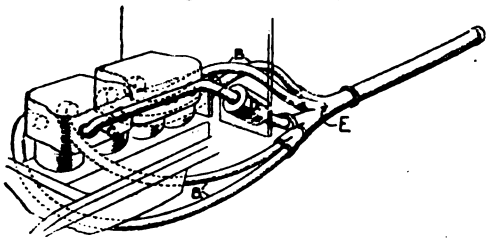
Before describing the action of the actual cooling arrangements, a description of the ingenious method adopted to coat the inside walls with the solution may be appreciated.

Looking at Fig. 1 it is seen that a specially-made metal cover



(A) is fitted on top of the cylinders. This is removed, all the water exits are blocked up, and then the jacket is filled with the mixture in the form of a thick paste, the engine being started up, and the paste being left to gradually boil away, so that a coating is left on all the inside walls, which, after a short time, becomes quite hard. From a test made with one pair of cylinders so coated, and one pair not so coated, a difference in temperature of about 50 degrees was found.

Now that this system of chemical coating is explained, the rest of the arrangement is very simple. Looking at Fig. 2, the exhaust pipe (C) delivers the burnt gases to the exhaust box (D), and then to the middle connection of the five-branched connecting piece (E), wherein the exhaust pipe ends in an ejector, at a point approximately indicated by the arrow. The action of the gases, passing through this ejector creates a suction on the other four pipes (B), which are connected up to the bottom of the water jackets of the respective cylinders (see Fig. 1), so that air is drawn in through the holes (F) and around the base



of the plate (A), which is fashioned to leave a small clearance around the dome of the cylinder head, as indicated by the arrow in Fig. 1.

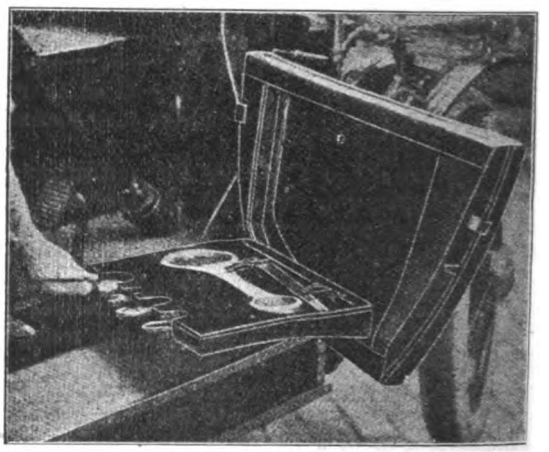
It will thus be seen that a continual stream of air is drawn around the valve pockets and cylinder heads, which, although, of course, it does not keep the engine as cool as water would, nevertheless keeps it cool enough to be run satisfactorily.

Beyond the obvious advantages of doing away with water in the cooling system, such as the immunity from frost danger, the saving in the cost of the radiator, pump, etc., and the inconveniences not infrequently associated with these adjuncts, it is claimed that better efficiency is obtained both as regards mileage per gallon of gasoline and also the power obtained.

The usual temperature of the air inside the water jackets when the engine has been running some time is found to be about 280 degrees to 300 degrees Fahr., while, curiously enough, the air in the pipes (B) is found to be a little higher in temperature.

GOOD IDEA FOR TOOL BOX.

The treatment of the door of a car to serve as a tool-box when the design affords such a door inclosing the driver's seat or compartment, as shown in the illustration, is an idea that has



Lancaster Compact Tool Box.

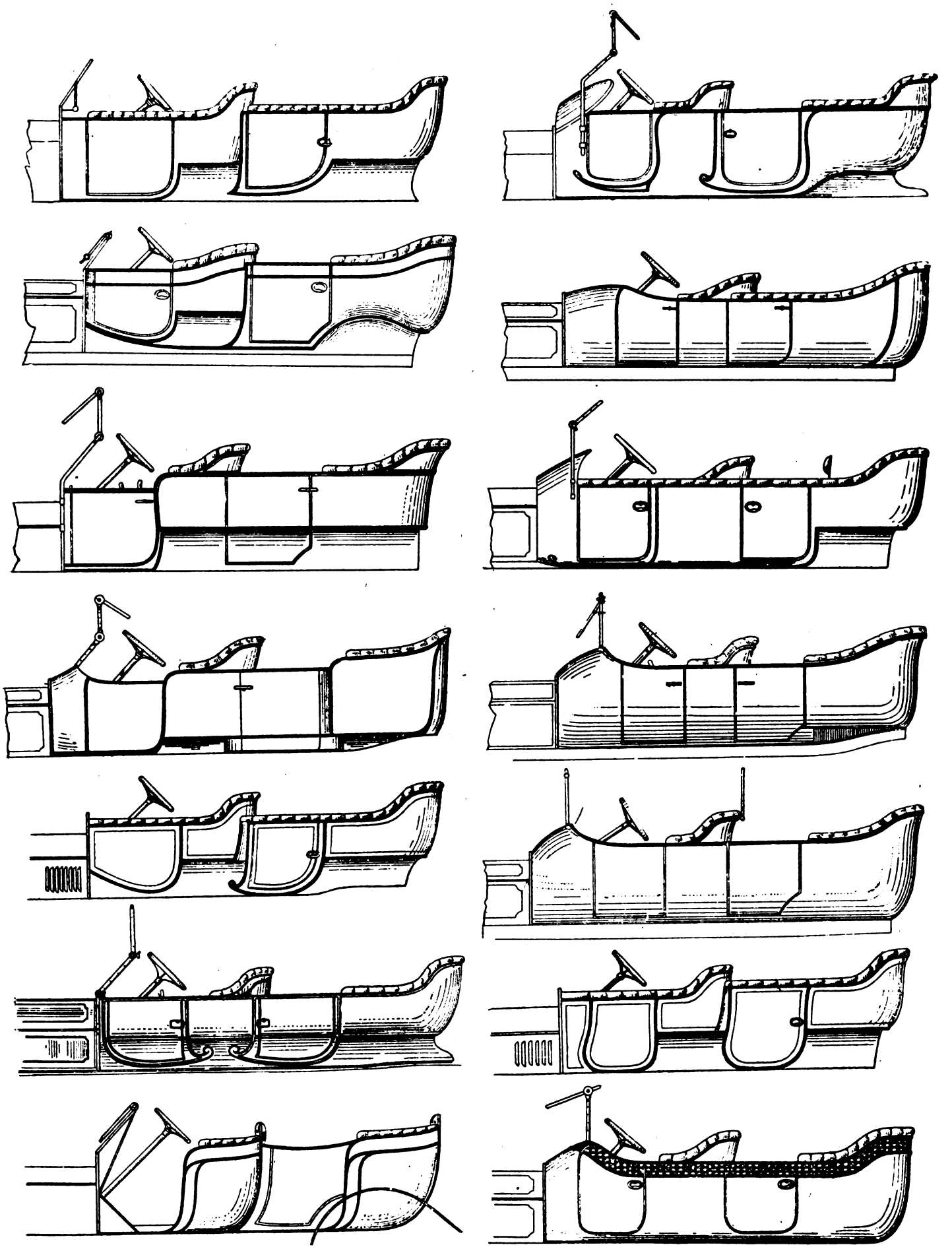
been applied with success abroad, and we republish the sketch for its suggestiveness to builders in this country.

This arrangement allows for the quick accessibility of such tools as are in most demand for simple repairs, and it seems to us a good feature.

NEW OFFICERS.

The Automobile Trade Credit Association, with headquarters in New York City, through its board of directors, elected new officers for the coming year. Carl Kaufman, general manager of the Motor Car Equipment Co., of New York, was made president, with Michael J. Martin, of the George A. Haws Company, treasurer.

Digitized by Google



Types of Foreign Built Torpedo Bodies

Digitized by Google

AN INTERESTING TYPE OF CARBURETOR.

A departure from previous carburetor designs shows the highly ingenious manner in which every requirement has been arranged. Not the least recommendation is the simplicity of the various parts, the ease with which they can be dismantled or assembled, and the entire absence of fragile pieces. A salient feature is the fact that the mixing chamber is open to the atmosphere and at high speeds gasoline issues downwards from the jet like a miniature waterfall. It is actually possible to observe this without touching a cover or anything of the kind. Until the principle upon which the device has been constructed is realized it looks dangerous to see a match held just above the spray, and blown out as the air is drawn past by the suction.

The claim is made that for any and every engine speed, over the whole range of power that any engine can develop, the mixture remains constant, and, further, that the maximum power can be given out with a minimum consumption of fuel. Although the gasoline is broken up into a fine spray, the usual spraying jet disappears, to be replaced by something on original lines.

The larger perspective drawing (Fig. 1) depicts the complete carburetor and shows every portion except the float, the balancer piston and the atomizer, this last being illustrated in an enlarged form in Figs. 2 and 3. Gasoline enters the float chamber (B) down the pipe (A) in the detachable cover (held down by screws), the float needle valve therefore pointing upwards and

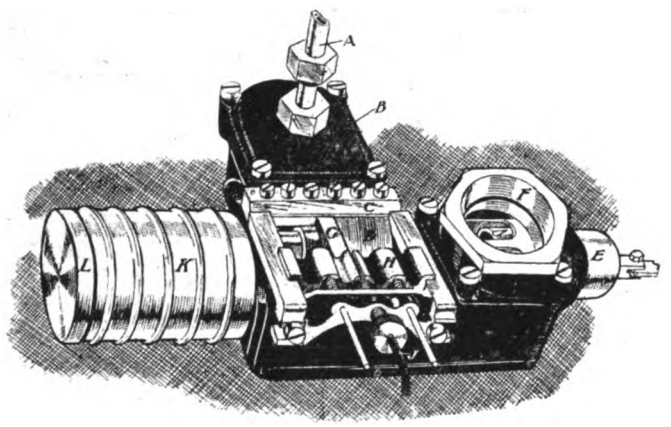


Fig. 1.

having its seating in the centre of the cover. The float chamber contains no balancing weights, collar or springs, the float being rigidly attached to its spindle, and the absence of these usual fittings is because the height of the gasoline is quite immaterial, so long as it does not reach beyond the outlet to the atomizing orifices. This disposes of one difficulty that sometimes causes considerable trouble when tuning up a carburetor to suit a particular engine, i. e., when the gasoline must be so controlled by the float as to stand within a fraction of a millimetre of a certain height below the top of the jet. The gasoline is drawn, by engine suction, through the horizontally-projecting atomizer container (C)—detailed in Figs. 2 and 3—the fuel being dragged downwards into the mixing chamber in the shape of a miniature Niagara Falls (D). All air required is simultaneously sucked downwards, the gasoline being in direct communication with the atmosphere, exactly as depicted in the drawing, and the explosive mixture passes into the engine via the pipe (F).

The atomizer consists of a number of very thin plates, stamped out of sheet brass (Fig. 2), having slotted and plain squares alternately, while the plates also alternate so that when these are clamped tightly together under the six screws (C, Fig. 1), they present the appearance of Fig. 3. Behind the atomizer container (C) is a filter chamber, and despite the fineness of the slits in the brass plates, the filter will effectually prevent the passage of dirt, and that, in case of need, it can be easily cleaned.

The next important feature is a balancer piston contained in the chamber (K), having a head which fits the walls tightly and impinges against a light coiled spring at L, which has just sufficient strength to push the piston to the end of its travel in K. The trunk of the piston is slightly smaller in diameter than K, has the exterior in direct communication with the air to the left of the squared sliding piece (G). The sliding piece (G) is rigidly attached to the trunk piston extending from K, and the piston is hollow from end to end, opening out into the mixing chamber beyond G and into the chamber (L) beyond the piston head. The slide (H)) is merely to regulate the quantity of air that can enter the mixing chamber, is controlled by the Bowden wire (J) from the dashboard or steering wheel,and is only moved when the atmospheric conditions differ materially, such as between a hot day in summer, and a cold moist day in the winter.

At the starting-up position, the throttle (E) is half-opened, slide (G) then exposing about one-sixteenth of an inch of the line of atomizers (C). If the throttle is left half open, the suction of the engine creates a vacuum behind the piston head in K, and remembering that the exterior of the piston trunk is only at normal atmospheric pressure, it is apparent that the piston will be pushed to the left against the pressure of the spring in L. This action causes the slide (G) to come to the left, just about as represented in Fig. 1, opening more of the atomizing orifices. The face of slide (G) is invariably parallel with the side of the mixing chamber and invariably at a right angle to the slide (H), consequently, whatever may be the quantity of gasoline passing, the proportion of air to that quantity never varies. Exactly the same conditions apply whether air slide (H) is moved closer to or farther from the gasoline outlets at C. The carburetor can be "tuned up" almost instantaneously to an engine, if the right s ize has been selected, by simply loosening the two large screws in front, moving the slide (H) till the engine pulls properly at slow speed and tightening the screws, and it will then be correct for any speed.

FREEZING MIXTURES.

The severe cold of the season calls to mind the fact that the anti-freezing mixtures freeze readily at certain temperatures. An ordinary solution of calcium chlorine, with a specific gravity of 1.2 will freeze at about 15 degrees Fahr., while the glycerine solution with a specific gravity of 1.1, so commonly adopted, and not unnaturally relied upon, will freeze at about 0 degree Fahr.

The Pitt County Buggy Company's factory at Greenville., N. C., was destroyed by fire February 25. The loss is estimated, gross at $150,000. but it covers the destruction of other property as well.

Wants

Help and situation wanted advertisements, one cent a word; all other advertisements in this department, 5 cents a word. Initials and figures count as words. Minimum price, 30 cents for each advertisement.

HELP WANTED.

Wanted: Man to take charge of body making department on high grade limousine and touring car work. About twenty-five men employed. Must be capable of doing his own body drafting. Position in Ohio. Address Box 14, care Hub, 24 Murray St., New York.

SITUATIONS WANTED.

Situation Wanted—Position as foreman by carriage body maker and draughtsman in body shop or body department of auto shop. Twenty-four years' experience. Understands how to get work out in large quantities on machines, can handle men and make good. W. J., care The Hub, No. 24 Murray Street, New York.

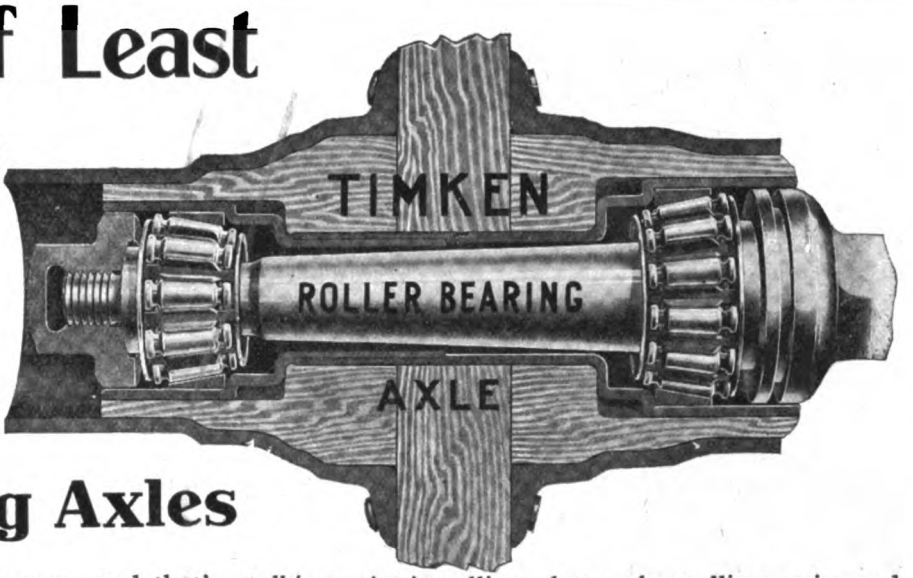
PATENTS.

Patents—H. W. T. Jenner, patent attorney and mechanical expert, 608 F St., Washington, D. C. Established 1883. I make an investigation and report if a patent can be secured and the exact cost. Send for full information. Trade-marks registered.

Digitized by Google

The Line of Least Resistance

is always the line to follow, whether it is building, selling or using vehicles.



TIMKEN
Roller Bearing Axles

not only makes hauling easier for the user—and that's a talking point in selling—but makes selling easier and that means PROFIT to you.

Timken Roller Bearing Axles

have proven through years of use and experience by the largest makers and users of horse-drawn vehicles to not only reduce the draft 50 per cent., but earn on commercial trucks as high as 500 per cent. on the amount they cost and

ARE GUARANTEED FOR TWO YEARS. CATALOG AND PRICES FOR THE ASKING.

THE TIMKEN ROLLER BEARING CO.

Branches
10 E. 31st Street, New York
429 Wabash Avenue, Chicago, Ill

Canton, Ohio.

Cover a carriage top with MERITAS enameled oil cloth—cover another with any other kind—follow them up and see how long the tops last.

MERITAS will be in good condition long after the other has been caked, cracked and weather-killed.

Try it—then stick to the kind that lasts the longest.

Look on the back of the goods for our trademark.

See Your Jobber.

Standard Oil Cloth Co.
320 Broadway, New York

Painters and Decorators
Save Time, Labor and Money,
using the

Uebelmesser
Striping and Stencil Wheel

With this simple, clean and rapid-action tool the most ordinary decorator can do the finest striping and stencil work and produce a bigger day's work with less labor than by the old fashioned method. Complete directions are furnished with each tool. They are as simple as the tool itself.

Complete Outfit consisting of Machine, 10 Plain and 10 Ornamental Wheels, only - $5.50

LIBERAL DISCOUNT TO THE TRADE

Manufactured by

CHARLES R. UEBELMESSER CO.
BAYSIDE, NEW YORK, N. Y.

Please mention "The Hub" when you write.

Digitized by Google

A New

Tire Drill

Most rapid working tool on the market for this class of work.

Capacity:

Any wheel up to 60 in. diam.
Any width of tire up to 6 in. wide.
Any hub up to 10 in. diam.

Better get some details of this Drill.

Send for Catalogue.

Established 1872.

W. F. & JNO. BARNES CO.

588 Ruby Street
ROCKFORD, ILL.

H.K. PORTER
27 YEARS BOLT CLIPPERS 27 YEARS
EVERETT, MASS., U.S.A.

TRUCK BUILDERS

If you only realized the inestimable value of roller bearing fifth wheels on trucks, vans, delivery wagons and all other medium and heavy vehicles, no job would leave your shop without

Roller Bearing Fifth Wheels

WHY? The adjustment is perfect. No oil or grease required. Almost indestructible. Will outwear any vehicle. Saves horseflesh and prolongs life of vehicle. Ask your jobber for the celebrated

NIELSON OR KING

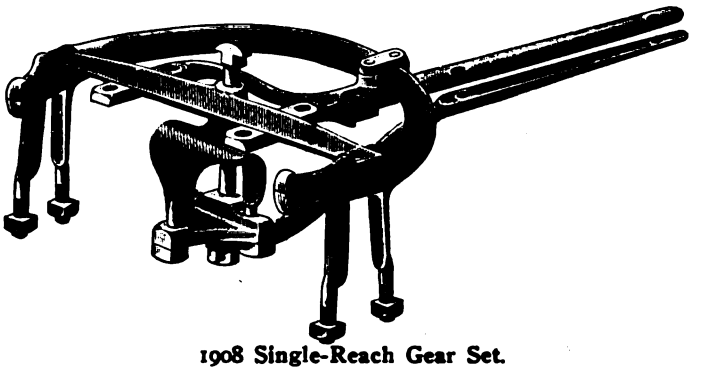
Let us send you Catalogue and Price List.

American Roller Bearing Fifth Wheel Co.
745 THIRD AVE., BROOKLYN, N. Y.

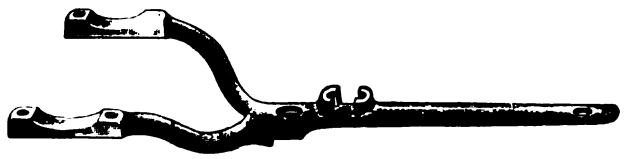
INDEX TO ADVERTISEMENTS.

Digitized by Google

FIFTH WHEELS—FORGINGS



1908 Single-Reach Gear Set.



Detachable Fork Perch Connection Used in 1908 Gear Set.

Greatest Line on Earth

WHEN ORDERING GEAR SETS BE SURE TO GET THE GENUINE

Wilcox Rear King-Bolt Gear Sets

WRITE US FOR FULL PARTICULARS

THE D. WILCOX MANUFACTURING CO.

MECHANICSBURG, PENNSYLVANIA

Our Carriage or Spring Edge Cushion Frame

Is not an Experiment, but has been tried and stands the test.
We would like to quote you prices.
NATIONAL SPRING and WIRE CO.,
ALBION, MICH., and ST. CATHARINES, ONT., CAN.

Jones Wheels

BEST ON EARTH

KANTSAMORE

Phineas Jones & Co.
Newark, N. J.

THE STANDARD BODY LOOP

NONE LIKE IT NONE EQUAL TO IT

A popular body loop, unequaled by any on the market.
For further information, address

The KEYSTONE FORGING CO., Northumberland, Pa

CARRIAGE SPRINGS

OF EVERY STYLE AND PATTERN TO ORDER

Also Curtain Rollers and Concealed Hinges
EXCLUSIVELY FIRST-CLASS WORK
THE BEST THAT CAN BE MADE

SPRING PERCH CO.

BRIDGEPORT, CONN.

Please mention "The Hub" when you write.

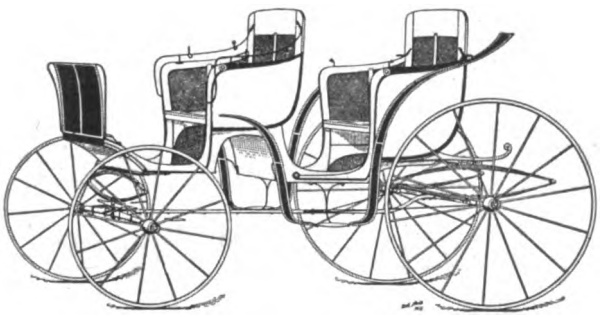
Digitized by Google

Vehicles in the White

WITH TRIMMINGS OR WITHOUT
THAT'S THE WAY WE MAKE THEM

GREATEST VARIETY OF STYLES ON THE MARKET.

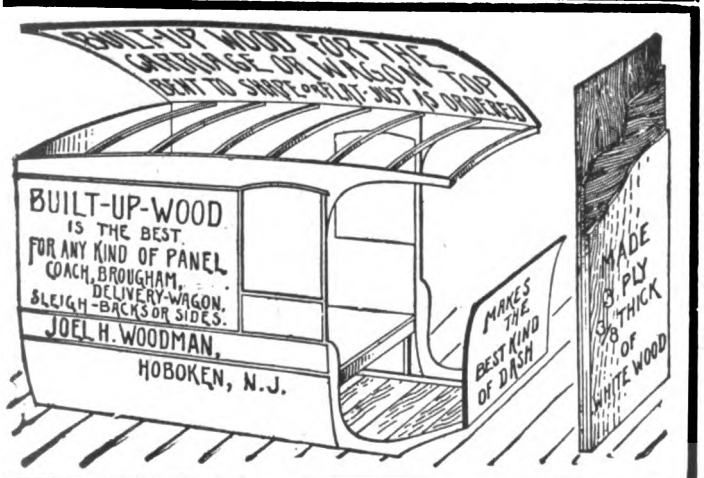
AUTOMOBILE BODIES A SPECIALTY



OUR LINE OF GEARS WILL INTEREST YOU.
MORE THAN FIFTY DIFFERENT STYLES.

WRITE FOR OUR CATALOGUE.

Schubert Bros Gear Co.
ONEIDA, N. Y.

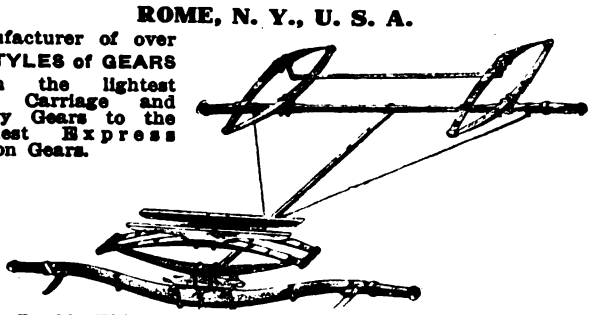


FITCH GEAR COMPANY

ROME, N. Y., U. S. A.

Manufacturer of over 40 STYLES of GEARS

From the lightest Fine Carriage and Buggy Gears to the heaviest Express Wagon Gears.



The Double Elliptic 3-Spring Gear is the most practical combination business and pleasure gear on the market, and is equipped with Wrought or our Common Sense Short Turn Fifth
Send for our No. 24 Catalogue.

Advertisements Classified

The following list includes advertisers in THE HUB. Each advertiser is entitled to name under one heading only. An extra charge for name under more than one heading.

Axles, Etc.
Timken Roller Bearing Co., Canton, Ohio.

Bodies, Seats, Etc.
Woodman, Joel H., Hoboken, New Jersey.

Bolts and Nuts.
Columbus Bolt Works, Columbus, Ohio.
Russell, Burdsall & Ward Bolt and Nut Co., Port Chester, N. Y.

Carriage Cloths.
Wiese & Co., Wm., New York City.

Carriage Forgings.
Eccles Co., Richard, Auburn, N. Y.
Keystone Forging Co., Northumberland, Pa.

Carriage Hardware.
Gifford & Son, John A., New York.

Carriage Goods.
English & Mersick Co., New Haven, Conn.
Gifford & Son, John A., New York.
Herbrand Co., The, Fremont, O.

Dashes, Fenders, Rails, Etc.
McKinnon Dash Co., Buffalo, N. Y.

Fifth Wheels.
American Roller Bearing Fifth Wheel Co., Brooklyn, N. Y.
Wilcox Mfg. Co., D., Mechanicsburg, Pa.

Jacks.
Hankinson, J. V., Franklin, O.

Lamps.
Gifford & Son, John A., New York.
Stevens & Sackett Co., New Haven, Conn.

Machinery and Tools.
Barnes Co., W. F. & John, Rockford, Ill.
Porter, H. K., Everett, Mass.

Miscellaneous.
Standard Oil Cloth Co., New York.

Props and Bow Sockets.
Crandall, Stone & Co., Binghamton, N. Y.

Rubber Tires.
Consolidated Rubber Tire Co., New York City.
Goodrich Co., B. F., Akron, O.
Goodyear Tire and Rubber Co., Akron, O.
Swinehart Climber Tire & Rubber Co., Akron, O.

Shaft Couplings and Anti-Rattlers.
Bradley & Son, C. C., Syracuse, N. Y.
Eccles Co., Richard, Auburn, N. Y.
Metal Stamping Co., New York City.

Springs and Gears.
Fitch Gear Co., Rome, N. Y.
National Spring and Wire Co., Albion, Mich.
Spring Perch Co., Bridgeport Conn.

Trimming Materials.
Stevens & Sackett Co., New Haven, Conn.

Varnishes, Paints and Japans.
Devoe, F. W., and C. T. Raynolds Co., New York City.
Harland & Son, Wm., London and New York.
Masury & Son, John W., New York and Chicago.
Louderbach, A. E., New York.
Moller & Schumann, Brooklyn, N. Y.
Pierce Co., F. O., New York.
Smith & Co., Edw., New York.
Valentine & Co., New York, Chicago, Boston, Paris.
Willey Co., C. A., Hunter's Point, New York City.

Wheels.
Crane & MacMahon, New York.
Gifford & Son, John A., New York.
Hoopes Bro. & Darlington, West Chester, Pa.
Jones & Co., Phineas, Newark, N. J.
Standard Wheel Co., Terre Haute, Ind.

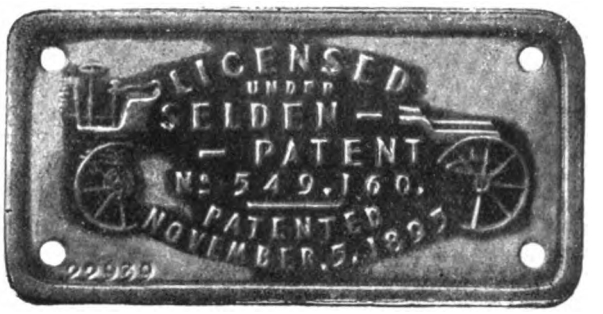
Wheel Stock, Bent Wood, Etc.
Crane & MacMahon, New York
Tucker Wood Work Co., Sidney, O.

Digitized by Google

This Advertisement is Published for the Protection of the Automobile Public

United States Patent No. 549,160, granted November 5, 1895, has been held by Judge Hough, of the United States Circuit Court for the Southern District of New York, to be valid and to cover the modern gasoline automobile.

This Patent is Known to the Public as the "Selden Patent"



Official License Plate

LICENSES have been granted to manufacturers of gasoline automobiles, the names of which are given below. This list includes almost every prominent manufacturer of automobiles in this country, as a perusal of the names will clearly indicate. Manufacturers whose cars are not in this list are infringers.

SUITS may be brought under this patent for infringements by manufacturers, by dealers, or by users of pleasure or commercial gasoline automobiles, and it is the intention of the owners of this patent to protect the exclusive rights secured by it to those who have become licensees, by commencing suits against infringers of it.

THE Selden Patent is a basic patent. It is recognized by nearly all reputable automobile manufacturers, and its basic character, as well as its validity, has been established by the Court, and therefore the manufacture, sale or use of any pleasure or commercial gasoline automobile by any person not licensed under this patent is unlawful and an infringement of this patent.

THE Association of Licensed Automobile Manufacturers stands for much more than merely the recognition of the Selden Patent. Its members, individually and through their combined efforts in the Association, are chiefly responsible for the development of the automobile to its present perfect state.

WHILE extending protection to a long list of manufacturers, it has not been the policy of those who control the patent to extend protection to new or untried or doubtful products.

THIS announcement is made so that buyers of automobiles may know the facts and be governed accordingly.

Read the list of cars licensed under Selden Patent:

AMERICAN MAKES

Acme	E-M-F.	Lambert	National	Regal
Alco	Flanders	Locomobile	Oakland	Rapid (com'l cars)
American	Ewing (taxicab)	Lozier	Oldsmobile	Reliance (truck)
Amplex	Fuller	Marion	Overland	Reo
Apperson	Glide	Mack (com'l cars)	Packard	Royal Tourist
Autocar	Grabowsky	Matheson	Palmer-Singer	Sampson (truck)
Brush	Franklin	Maxwell	Peerless	Selden
Buick	Haynes	McIntyre	Pierce-Arrow	Simplex
Cadillac	Hewitt (truck)	Mercer	Pierce-Racine	Stearns
Cartercar	Everitt	Mitchell	Pope-Hartford	Stevens-Duryea
Chalmers	Hudson	Moline	Premier	Stoddard-Dayton
Columbia	Hupmobile	Moon	Pullman	Studebaker-Garford
Corbin	Jackson	Mora	Rainier	Thomas
Dorris	Knox	Marmon	Randolph (com'l cars)	White
Elmore				Winton

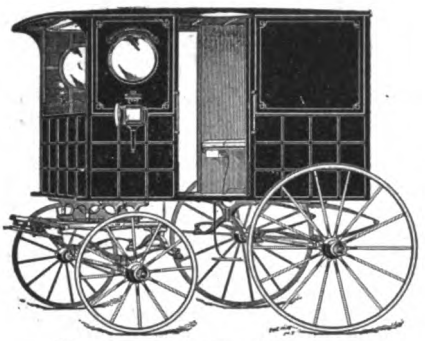
IMPORTED MAKES

Brasier Delaunay-Belleville Lancia

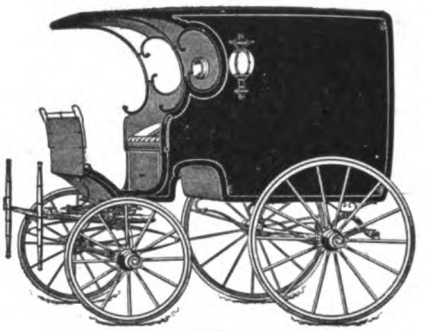
ASSOCIATION OF LICENSED AUTOMOBILE MANUFACTURERS

No 7 East 42nd Street, New York, N. Y.

Digitized by Google

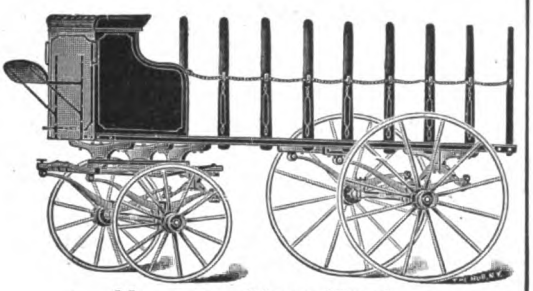


No. 112.—Milk Wagon.



No. 111.—Altman Wagon.

No. 113.—Grocery Wagon.



No. 122.—Flour Truck.

Electrotypes

of the vehicles presented on this page will be forwarded on receipt of

75 cts.

for each cut, to any address. Postage prepaid.

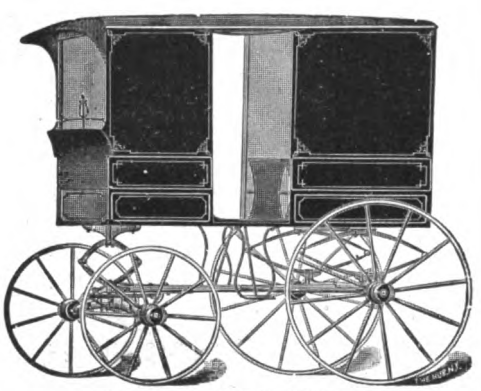
Catalogue

containing nearly 200 illustrations of carriages, wagons, sleighs, and miscellaneous cuts will be sent upon application.

Trade News Publishing Co.

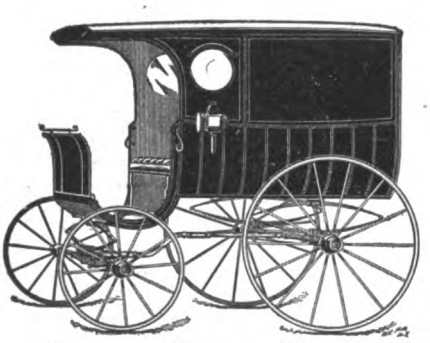
24-26 MURRAY ST.
NEW YORK

No. 115.—Delivery Wagon.

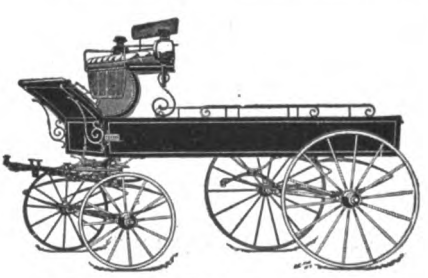


No. 116.—Milk Wagon.

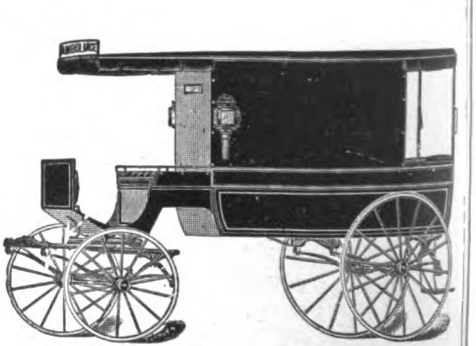
No. 117.—Merchandise Truck.



No. 114.—Delivery Wagon.



No. 124.—Delivery Wagon.



No. 118.—Ambulance.

Digitized by Google

PLATE 5.
Low Wheel Runabout.

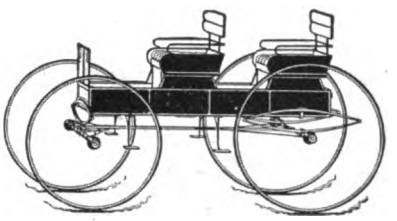


PLATE 10.
4 Pass. Beverly Wagon.

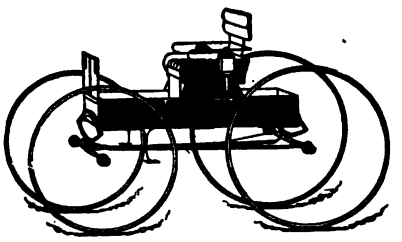


PLATE 15.
2 Pass. Beverly Wagon.

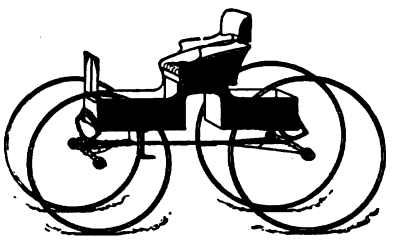


PLATE 20.
Cut-under Buggy.

MAKE YOUR
ADVERTISEMENT
ATTRACTIVE

By using these Advertising Cuts at 75 cts. each.

The plates shown on this page are especially made for newspaper advertising, but, because of their clearness, are as well suited for the best printed magazines and stationery.
They are

Unique in Style
Correct in Detail
Attractive in Appearance

and represent the most popular carriages of to-day.

A special plate, the size and character of those on this page, of your own design and for your exclusive use, will be furnished for $3.00.

One or more sent at 75 cts. each, by mail (postage prepaid) on receipt of check or money order.

TRADE NEWS PUBLISHING CO.,
24-26 MURRAY ST.,
NEW YORK.

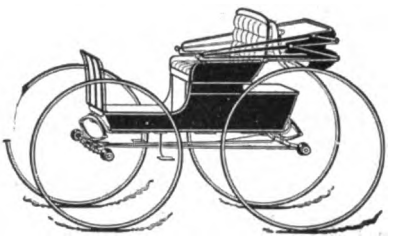


PLATE 25.
Corning Buggy.

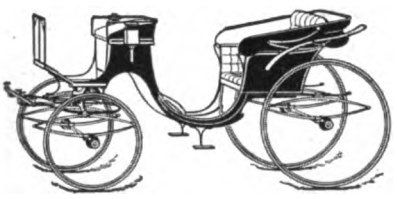


PLATE 30.
Panel-boot Victoria.

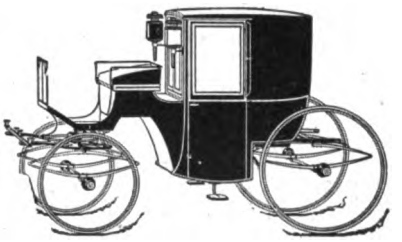


PLATE 35.
Brougham.

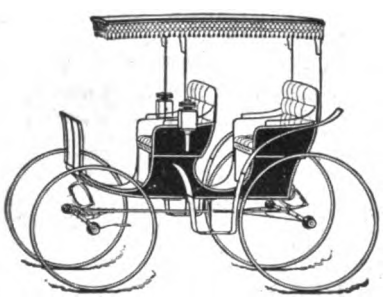


PLATE 40.
Canopy-top Surrey.

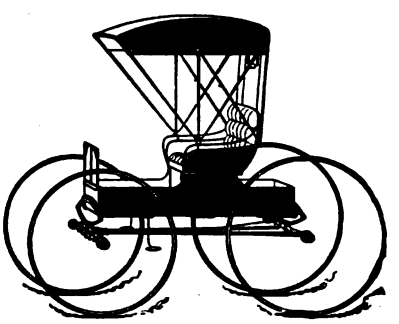


PLATE 45.
Elliptic Spring Buggy.

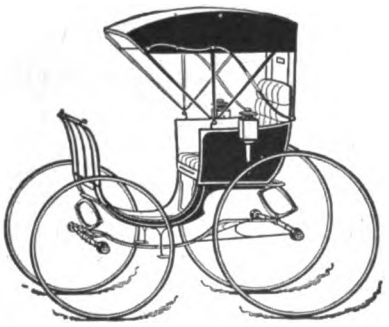


PLATE 50.
Ladies' Phaeton.

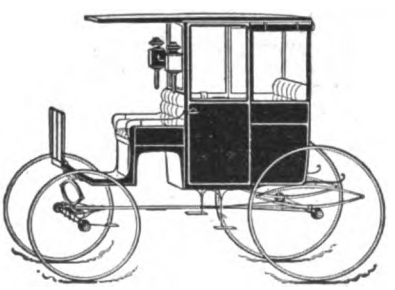
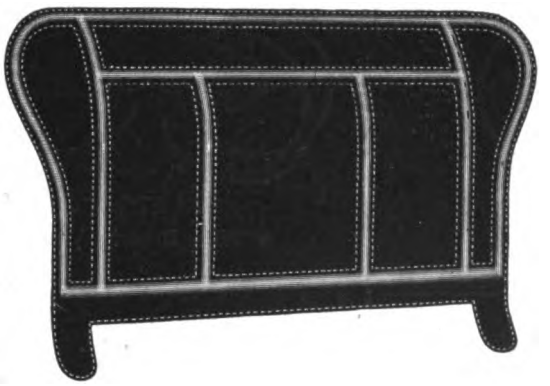


PLATE 55.
Station Wagon.

PLATE 60.
Doctor's Phaeton.

Digitized by Google



HIGH GRADE

Dashes and Fenders

THE INDIANAPOLIS DASH CO.

INDIANAPOLIS INDIANA

ESTABLISHED 1886.

Correspondence School of Carriage and Motor Carriage Drafting

A thorough, practical tuition is given through this correspondence school. The theory and practice of construction, bookkeeping, perspective. Many men now hold good positions through taking the courses of instruction.

Principal, THOS. MATTISON,
Hillside Avenue, Bitterne Park,
Southampton, England.

Author of "The Coach Body Makers' Guide," $3.00; a practical treatise on "The Suspension of Carriages," "Bookkeeping," and other carriage building works.

Carriage Mechanics

Desiring to improve their present Condition should attend the

TECHNICAL SCHOOL

FOR

Carriage Draftsmen and Mechanics

SUPPORTED BY THE

Carriage Builders' National Ass'n.

The object of the School is to teach men to design vehicles and make working drawings, and to otherwise facilitate their work in the shop. Only those men employed in carriage or automobile building or their accessory trades are admitted to its privileges.

The classes are conducted in three divisions, viz.: Corresponding, Day, and Evening. The former is open during the entire year, while the day and evening classes are in session only from October 1st to April 1st.

The tuition is moderate.

For prospectus and full particulars, write to the instructor,

ANDREW F. JOHNSON,
18 West Forty-fourth St.,
NEW YORK CITY.

JOHN A. GIFFORD & SON
25 PARK PLACE
CARRIAGE MATERIALS
22 MURRAY ST.
NEW YORK.

The George R. Carter Co.

Manufacturers of

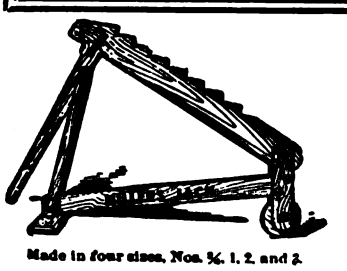
AUTO STRAPS A ESPCIALTY

CRANK STRAPS, HOOD STRAPS, TOP STRAPS AND TOOL BOX STRAPS.

JOBBERS IN

TRIMMING LEATHER, TOP LEATHER, LEATHER CUT TO PATTERN FOR CUSHIONS OR TOPS,
SHAFT LEATHERS, SHAFT STRAPS, POLE STRAPS, ETC.

CONNERSVILLE, INDIANA.



Made in four sizes, Nos. ½, 1, 2, and 3.

JACKS FOR BUGGIES AND WAGONS

Miller Patent Wagon Jack
Made by

J. V. HANKINSON,

Successor to THOS. MILLER,
FRANKLIN, OHIO.

Write for particulars and prices.

Richard Eccles Co., Auburn N. Y.

Manufacturers of

Forgings: Carriage, Wagon, Automobile, Special

Send for Catalogue.

Digitized by Google

F. W. DEVOE & C. T. RAYNOLDS CO.

101 and 103 FULTON STREET, NEW YORK

Manufacturers of

F. W. DEVOE & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

C. T. RAYNOLDS & CO'S { COACH COLORS, VARNISHES, BRUSHES, SPECIALTIES

FOR PAINTERS, ARTISTS AND DECORATORS

All the brands and specialties of F. W. Devoe & Co. and C. T. Raynolds & Co. will be maintained separately as heretofore.

The Tires for Satisfaction

Goodyear Wing Carriage Tires and Goodyear Eccentric Cavity Cushion Tires with canvas guides are tires that wear—that give satisfaction and increase the dealer's trade. For all

GOODYEAR

tires are made of new, pure rubber, not of reclaimed "rubber" from the junk heap, nor any low grade. They sell easily because they save the user money—which pleases him—and he tells his friends.

Write today for free booklet showing how Goodyear Carriage Tires are built. Ask for sample section.

THE GOODYEAR TIRE & RUBBER CO., Canal Street, Akron, Ohio

Boston	Philadelphia	Cleveland	Buffalo	Denver
Los Angeles	New York	Chicago	Detroit	St. Louis
Cincinnati	San Francisco	Pittsburg	Atlanta	Washington

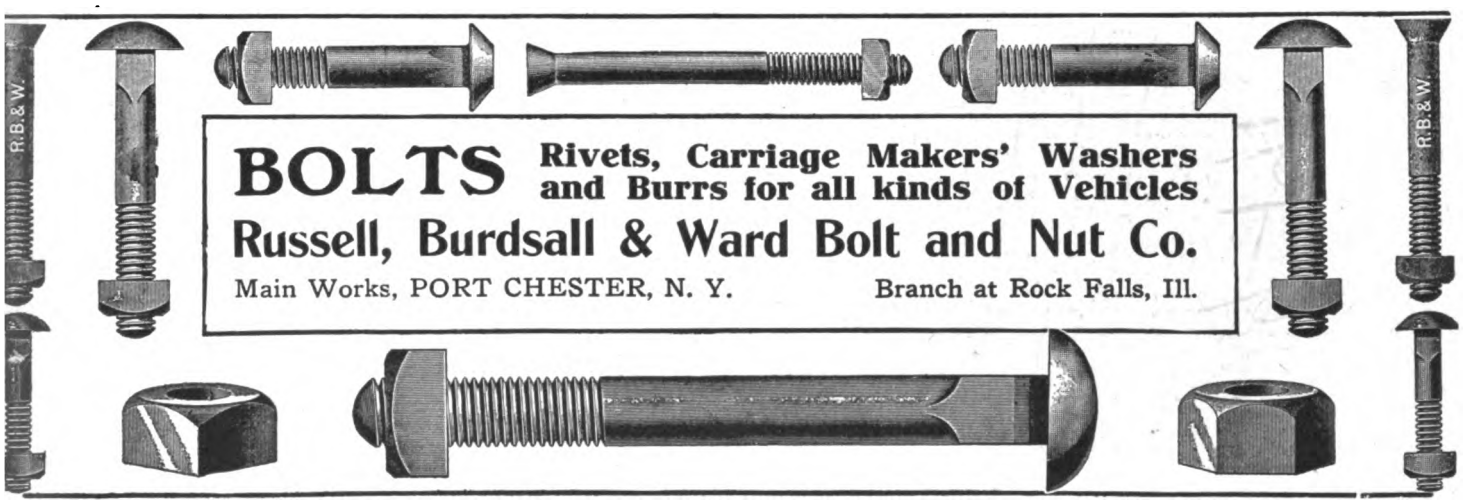
Brazil Leather

FOR AUTO BUGGY TOPS

SEAT AND BACK SPRINGS,
COTTON, NAILS, WADDING,
MOSS, TACKS, WASHERS,
HAIR, BUTTONS, REEDS,
REED MOULDING,
CLINCH BUTTONS

G. H. Lounsbery & Sons

Cincinnati, Ohio

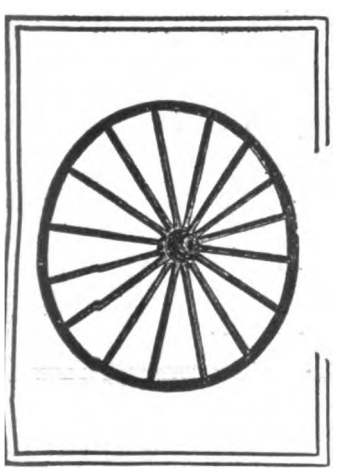


BOLTS

Rivets, Carriage Makers' Washers and Burrs for all kinds of Vehicles

Russell, Burdsall & Ward Bolt and Nut Co.

Main Works, PORT CHESTER, N. Y. Branch at Rock Falls, Ill.



Time Has Told the Story!

Service and satisfaction always follow our rolling stock

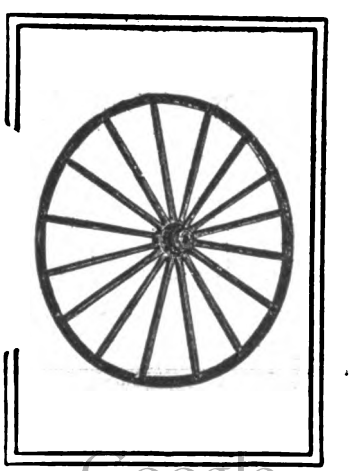
WHEELS

ALL KINDS—BEST QUALITY

Also RIMS and SPOKES

The Eberly & Orris Mfg. Co.

MECHANICSBURG, PA.

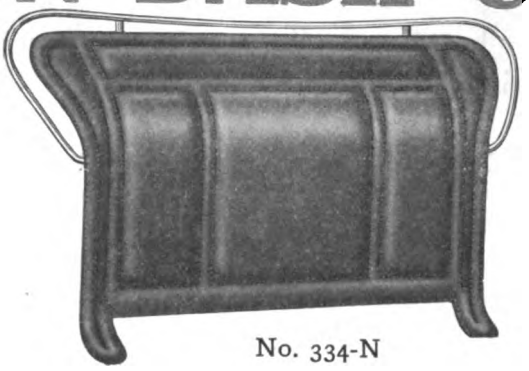


Digitized by Google

McKINNON DASH COMPANY.

BUFFALO, N. Y.

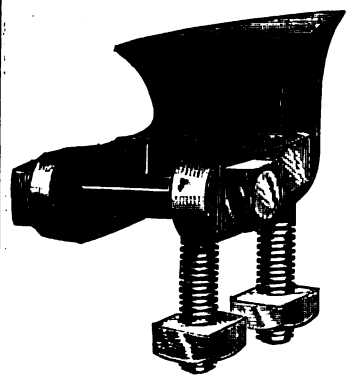
TROY, OHIO.
CINCINNATI, OHIO.
ST. CATHARINES, ONTARIO.



No. 334-N

Wing dashes
With rails
Will pleas

Shaft leathers
Shipped promptly
Satisfactory prices



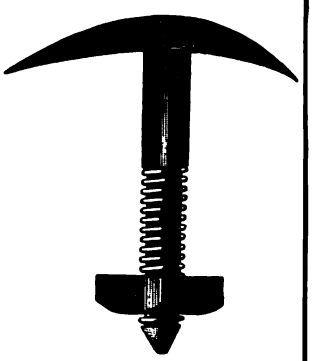
Skewed Shaft Couplings

Regular or Oval Patterns
For High Arched Axles

Furnished in rights and lefts for any height of arch. Oval Axle Clips ⅝ or ¾ width to match Oval Couplings. Bolts, Clips, Couplings, Carriage Hardware and Special Forgings

Catalogue "H" and Prices on Application.

COLUMBUS BOLT WORKS, Columbus, O.



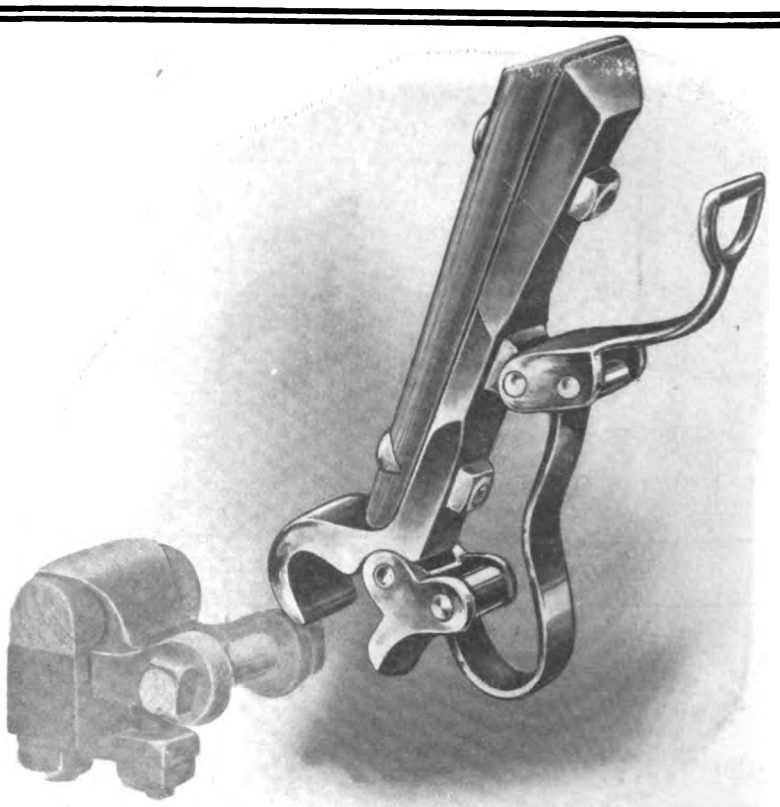
THE

BRADLEY HOLD-FAST

Carriage Coupler No. 30

If you feel that you MUST use the old style bolt or lug shackle on the axles of some of the carriages you manufacture, the BRADLEY HOLD-FAST coupler will meet every requirement. . . . . The HOLD-FAST is made in buggy size only. Shart ends and pole ends. . . While the BRADLEY BALL BEARING is the BEST carriage coupler ever made, the HOLD-FAST is the best in its class.

C. C. Bradley & Son.
Syracnse, N. Y.



HOLD-FAST, NO. 30, SHAFT END.

Digitized by Google

Digitized by Google

Digitized by Google

Digitized by Google

UNIVERSITY OF MICHIGAN
3 9015 08004 8922

Digitized by Google